



**No time for face time:** Large companies are moving to video-conferencing to connect project teams scattered across the globe. **PAGE 34.**

# NetworkWorld

The leader in network knowledge ■ www.nwfusion.com

February 11, 2002 ■ Volume 19, Number 6

## Has slump hit bottom?

VC survey produces optimism, but other indicators less rosy.

■ BY CAROLYN DUFFY MARSAN

WASHINGTON, D.C. — The network industry got mixed economic news last week. A survey showed venture capital spending has come out of its nosedive, but Senate leaders shelved a proposed tax break that could have boosted corporate IT spending.

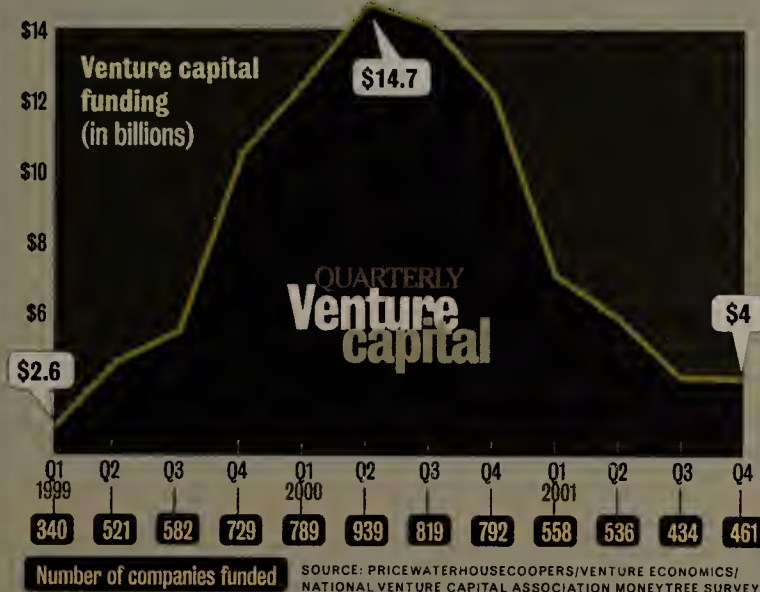
The venture funding news and other positive developments prompted experts to conclude the 18-month industry slide has likely hit rock bottom. However, they remain cautious about how quickly the industry will rebound.

"We're seeing a glimmer of hope," says Harris Miller, president of the Information Technology Association of America (ITAA), a

See VC survey, page 12

### A hopeful sign?

The slide in venture capital funding for network companies appears to be bottoming out, as fourth quarter funding was roughly the same as that of the previous quarter.



## Alcatel set to launch IP offensive

■ BY PHIL HOCHMUTH

PARIS — Alcatel will make a hard charge at U.S. businesses this week with a variety of high-end IP products aimed at putting the European company on the short lists of convergence-minded corporate IT buyers.

The vendor's new enterprise Ethernet network core and edge switches — set to be unveiled at the Alcatel Forum customer conference — purportedly offer the highest concentration of Layer 2-Layer 4 Gigabit Ethernet ports on the market, while two new VPN offerings could help users more effectively secure remote connections into corporate networks. With this multiproduct push, Alcatel is looking to compete more aggressively with Cisco, Avaya, Nortel and Enterasys Networks.

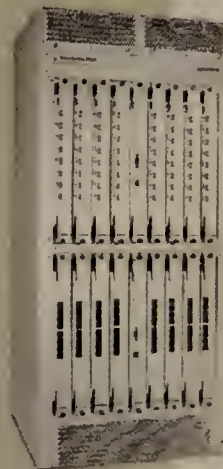
Competitively, what may help Alcatel is a product line that now includes high-end datacom products as well as traditional and IP voice gear, observers say. Competitors Avaya and Nortel offer data products and split the PBX market in the U.S., but have been slow to get IP voice products out the door (Siemens announced voice-over-IP products this week; see page 15 for details). And while chief rival Cisco owns the

See Alcatel, page 49

### Vive la VoIP

Alcatel is set to make a big splash with a family of IP voice and data gear that promises to support more users while providing customers with end-to-end QoS and security. Included in the announcement:

- The 16-slot OmniSwitch 8800 backbone (pictured), 10-slot 7700 and 18-slot 7800 wiring closet switches feature Layer 2-Layer 4 switching, hardware-based ACLs, QoS and load balancing.
- The OmniAccess 250 for large site-to-site VPNs and OmniAccess 210 for small branch offices. The 250 will support 70M bit/sec of Triple-DES traffic, while the 210 will offer throughput of 10M bit/sec.



## Sniffer taking on new duties

■ BY ELLEN MESSMER

SANTA CLARA — Network Associates, which ditched its intrusion-detection systems last spring, is planning a fresh assault on this market because of customers' heightened awareness of security threats.

The company's plan centers

around adding threat-assessment capabilities to Sniffer, the packet-analysis product line that Network Associates says 100,000 customers use.

"Later this year we will have IDS software modules for all versions of Sniffer," says Rich Van de Groenekan, a product manager for Network Associates.

The company based its earlier proactive security technology effort on its CyberCop line of IDS appliances and software, most of which was discontinued last April due to slow sales, just three months after George Samenuk took over as the company's CEO. The IDS technology being built for Sniffer derives in part from CyberCop, which ironically was developed through a mid-1990s venture between WheelGroup (now part of Cisco) and Network General, the company that created Sniffer and later merged with McAfee Associates to form Network Associates.

While companies such as Internet Security Systems and

See Sniffer, page 14





*"I've got a hunch about this one."*

# INFRASTRUCTURE: THE MICKEY MANTLE ROOKIE CARD OF E-BUSINESS.

---

RETURN ON INVESTMENT. It's what turns a five cent investment in 1951 into a \$19,500 profit in 2002. It's the very principle motivating companies to make investments in their infrastructure (hardware, software and services) every day.

A relatively small investment in software or IT equipment can provide a huge payday for companies that want to grow. Companies that are looking to streamline processes, attract new customers and expand services to existing customers.

The real issue lies in how to recognize the gem behind the stick of gum. There's no set formula. An e-business solution for the retail sector will differ from one for the automotive industry or a large bank. If your company is going to prosper, you'll need help identifying your optimum investment.

Of course, you can realize high returns by simply cutting costs. But then again, you could hit a home run by investing in open standards with Linux®-enabled servers that scale on a simple pay-as-you-grow basis.

You could focus your spending on cost-cutting and innovative IBM software such as Tivoli® and WebSphere®. Or you could speak to IBM Global Services about implementing Return on Web Investment (ROWI) methods. They help you balance your spending by providing a thorough framework to evaluate all of your investments, whether they be Web, IT or general business.

So unless you have a "hunch" about this one, call us at 800 426-7080 (ask for Invest) or visit us at [ibm.com/e-business/roi](http://ibm.com/e-business/roi) for our latest white paper, "ROI Methodology for Evaluating e-business Infrastructure."





# INTRODUCING A WHOLE NEW WAY TO LOOK AT STORAGE MANAGEMENT.

## BrightStor™ Storage Management Solutions

For years, storage management has been an ever-increasing cost, not a source of potential opportunity. But that's all about to change. Because we've created BrightStor, the most comprehensive suite of end-to-end storage management solutions on the market. BrightStor lets you leverage your resources and data across your entire enterprise, regardless of platform or protocol. In fact, BrightStor is the only suite of solutions that supports all three industry models — DAS, NAS and SAN — cross-platform. Which means you can look at your eBusiness needs as a whole, not piece by piece. So you can optimize your resources across your entire storage infrastructure. And, most importantly, you can do more than just store information. You can actually use it.



Computer Associates™

HELLO TOMORROW

WE ARE COMPUTER ASSOCIATES

THE SOFTWARE THAT MANAGES eBUSINESS™

[ca.com/storage](http://ca.com/storage)

©2001 Computer Associates International, Inc. (CAI). All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.



# News

- **8** Industry heavyweights launch **Web Service Interoperability Organization**.
- **8** **Equinix** readies network services.
- **10** **Application service providers** look to change stripes.
- **10** **Sun** promises to **drive Linux** deeper into its product line.
- **14** **Palm OS** to boast full Web browser.
- **14** Free-speech lawsuit filed against **Network Associates**.

## Infrastructure

- **15** **Siemens** unveils remote voice-over-IP gear.
- **15** **Quick Eagle** launches WAN access box with service-level verification pack.
- **16** **Dell** hooks up with **Cray** to offer server clustering.
- **16** **Dave Kearns**: Keeping up with the times.

## Enterprise Applications

- **17** Users find hosted customer relationship management applications hit bull's-eye.
- **18** **Scott Bradner**: Crustacean security.

## Net.Worker

- **21** Not part of the cable and DSL boom?
- **21** **GigaFast** switch is a small wonder.

## Service Providers

- **23** Larger outsourcers taking more direct role in application service provider market.
- **23** **Sprint** prepares frame service with IP twist.
- **24** **Johna Till Johnson**: Why Wall Street's got the carriers wrong.

## The Edge

- **25** Tracking traffic for trends.

**Cool Tools** gives thumbs up to some new products, including this slim **NEC MultiSync LCD 1550V** monitor.

## Technology Update

- **29** Intelligent route control improves BGP.
- **29** **Steve Blass**: Ask Dr. Internet.
- **30** **Mark Gibbs**: Spring cleaning.
- **30** **Keith Shaw**: Products that have graced the Cool Tools lab.

## Opinions

- **32** **Editorial**: Don't miss the VON VoIP Showdown.
- **33** **Joel Snyder**: Integrating the 'Net into net management.
- **33** **Frank Dzubeck**: Assessing the Gerstner era.
- **50** **Backspin**: Let the software buyer beware.
- **50** **'Net Buzz**: Changing the weather is easier than choking off spam.

## Management Strategies

- **37** Slim down, shape up: Putting your network on a simplification diet can pay off.



30

# NetworkWorld

## Features

### No time for face time:

Global companies such as Caterpillar and Dow Chemical are installing videoconferencing systems to reduce travel costs and improve the efficiency of project teams scattered in various locations.

**Page 34.**

**Donald Western, a vice president at Caterpillar, manages global teams from his office in Peoria, Ill.**



PHOTO: BRIAN WARLING

# NetworkWorldFusion

[www.nwfusion.com](http://www.nwfusion.com)

## Research

### XML

XML is used to store and share data across platforms. Our audio primer explains its history, benefits and drawbacks. **DocFinder: 8049**

### Voice over IP

New research page contains:

- Primers and tutorials
- Quality of service
- Standards
- Regulation
- Case studies and more.

**DocFinder: 8050**

## Forums

### AT&T and NAT

A reader writes: "Can NAT be stopped? Could AT&T . . . prohibit its use on their network?" Our featured forum on Net.Worker has generated more questions than answers in response to Toni Kistner's column.

**DocFinder: 8051**

### A new version of BorderManager

With Novell set to release a new version of its defunct product BorderManager in April, many see this as a good thing.

**DocFinder: 8052**

■ **CONTACT US** Network World, 118 Turnpike Road, Southborough, MA 01772; **Phone:** (508) 460-3333; **Fax:** (508) 490-6438; **E-mail:** [nwnews@nww.com](mailto:nwnews@nww.com); **STAFF:** See the masthead on page 8 for more contact information. **REPRINTS:** (717) 399-1900

**SUBSCRIPTIONS/CHANGE OF ADDRESS:** Phone: (508) 490-6444; Fax: (508) 490-6400; E-mail: [nwcirc@nww.com](mailto:nwcirc@nww.com); URL: [www.nwwsubscribe.com](http://www.nwwsubscribe.com)

## Columnists

### Compendium

The evil inside Fusion Executive Editor Adam Gaffin brings us to SecurityFocus' Web site, where instead of worrying about outside hackers they write about protecting yourself from evil insiders. **DocFinder: 8053**

### Help Desk

Novell solutions Columnist Ron Nutter addresses a user's problems integrating an Active Directory server with a Novell Directory Services tree. **DocFinder: 8054**

### Keeping Current

Why we need a single Twinax spec Columnist Fred McGlimans offers his response to Jeff Caruso's latest LAN newsletter on the reason for Twinax. **DocFinder: 8055**

## NetSmart

### Voice-over-IP training

With equipment provided by Avaya, NetSmart's voice-over-IP training explains the technology behind the merging of voice and data. **DocFinder: 8056**

### What is DocFinder?

We've made it easy to access articles and resources online. Simply enter the four-digit DocFinder number in the search box on the home page, and you'll jump directly to the requested information.



# New Bits

## Bad news plagues Enterasys

■ Enterasys Networks has postponed its planned spinoff of network management software subsidiary Aprisma Management Technologies after the company received word of an impending investigation by the Securities and Exchange Commission. On Jan. 31 the company also discovered discrepancies between contracts pertaining to the same \$4 million account within its Asia Pacific region. CEO Henry Fiallo said in a conference call that the investigation and the discrepancy are "apparently unrelated."

## Growth seen for Ethernet switch market

■ The worldwide Ethernet switch market will begin to creep back this year from its 2001 slump and pick up steam next year as companies look to upgrade aging wiring-closet boxes, according to Dell'Oro Group. A Dell'Oro report estimates that the market for Ethernet switches will climb from \$11.5 billion to \$18.9 billion in 2006. The growth will be linked to the fact that much of the equipment purchased in 1999 will be ready to be replaced beginning this year and into next year, the research firm says. This is in line with a standard three- to four-year technology upgrade cycle businesses tend to follow. New technologies such as 10G Ethernet, and the dropping price of Gigabit and Layer 3 switches, will also drive market growth.

## BT presses on with hyperlink suit

■ With a court date set for this week, British Telecom will press ahead with its patent-infringement lawsuit against Prodigy, even if the lawsuit brings BT bad publicity, says BT Chairman Christopher Bland. In the lawsuit, BT alleges that it owns the patent to hyperlink technology and that the U.S. ISP is using the technology without authorization. On Dec. 13, 2000, BT filed suit in federal court in White Plains, N.Y. "If the court decides in our favor, that would be nice. If the court doesn't decide in our favor, that would not be nice," Bland says. "But the idea of dropping the suit to increase the 'feel good' factor with ISPs in the U.S. would be a bizarre notion for us here in the U.K." After discovering in a routine check that it owned the patent, BT wrote to 17 U.S. ISPs, including Prodigy, asking them to pay for the privilege of using the technology.

## Sun debuts storage gear, software

■ Sun last week rolled out several hardware storage systems and new storage management software that signals its intent to manage and support multivendor storage. The company announced a sweeping storage management plan, first reported in *Network*

*World* in December 2001, as well as its intent to ship two midrange storage arrays. The storage management software will monitor and manage other vendors' storage arrays and focus on four areas: availability, performance, utilization and resource management. The new arrays are the midrange Sun StorEdge 3900 and 6900. The 3900 is geared toward clustering and high-performance computing applications. The 6900 is designed to consolidate servers and virtualize storage.

## House approves funding for security research

■ The U.S. House of Representatives last week passed a bill designed to fund research and workforce training in computer security. By a vote of 400 to 12, the Cyber Security Research and Development Act passed the House and has moved on to the Senate. The bill calls for \$880 million to fund programs designed by the National Science Foundation and National Institute of Standards and Technology to create new cybersecurity research centers, offer grants and scholarships to students pursuing computer security studies, and encourage senior researchers to study the field. The \$880 million would be spent over five years.

## Microsoft patches Telnet code . . . again

■ Microsoft last week acknowledged new vulnerabilities in the Telnet code included in Windows 2000, eight months after issuing a patch that fixed seven other security holes in Win 2000's Telnet. A buffer overflow attack — an attack in which the amount of memory allotted to an application is overrun — against the Telnet service could cause a

## ■ The Good The Bad The Ugly



**Togetherhness.** While it seems as if most vendor consortia never amount to much, it's good to seek the likes of IBM and Microsoft joining forces to create the Web Services Interoperability Organization. Given the confusion that surrounds this new concept, the forum's efforts can't hurt.



**Cache crash.** Caching product maker CacheFlow last week axed half of its 400 employees and said it expects to post revenue for its third quarter of between \$10.5 million and \$10.9 million, roughly half of what it pulled in during the corresponding quarter the year before.



**Cell chic.** What's more annoying than hearing a cell phone go off in the middle of a movie or meeting? Seeing that it's gold- or diamond-covered — a new trend from Nokia (with its new Vertu subsidiary) and Ericsson and their partners, which are targeting the very wealthy with communication devices costing tens of thousands of dollars. ➤



denial of service, or in some cases, let the attacker run any code in Win 2000 or Interix 2.2, Microsoft says. Telnet is a common-line program often used for remote access to systems. Interix is a program that lets users run Unix applications in Win 2000. Microsoft has issued a patch that fixes the problem in both applications.

## AT&T Wireless-TeleCorp deal to be sealed

■ AT&T Wireless' acquisition of TeleCorp PCS is expected to receive regulatory approval this week. AT&T Wireless announced its intention to buy the wireless service provider in October for \$4.7 billion in stock. On Friday, 94% of TeleCorp PCS shareholders approved the merger. Once the transaction is complete, AT&T Wireless will fully own TeleCorp PCS' assets. AT&T Wireless currently owns 23% of the company. The TeleCorp PCS assets will allow AT&T Wireless to expand its network primarily in the Southeast and the Midwest. Some of the most populated locales where TeleCorp PCS has wireless coverage include: Baton Rouge, La.; Birmingham, Ala.; Des Moines, Iowa; Jackson, Miss.; Knoxville, Tenn.; Lexington, Ky.; Little Rock, Ark.; Louisville, Ky.; Madison, Wis.; Memphis, Tenn.; Milwaukee; Mobile, Ala.; Nashville; New Orleans and Puerto Rico.





**Has too much data put you in a ba-a-ad mood? Store Smarter.™**

active  
**archive**

**Active Archive Solutions.™ The intelligent way to optimize database performance.**

Tight budgets and an even tighter database. Feeling squeezed? Well, while everyone else is buying more hardware, the smart ones Store Smarter with Princeton Softech's Active Archive Solutions.™ Active archiving sets aside infrequently used data to make room in your database, yet keeps it "active" for easy access. It's the cost-effective way to reduce database overload and improve performance. So give yourself some space. Store Smarter. Call 800.457.7060 or visit [www.storesmarter.com](http://www.storesmarter.com).

© 2002 Princeton Softech Inc. All rights reserved.

*princeton*  
**softech**



# Web services group push interoperability

Experts say standards aren't solving problems; Sun declines to participate.

■ BY MATT BERGER

A group of industry heavyweights has formed a consortium to ensure that Web services developers implement common standards in the same way.

The consortium, called the Web Services Interoperability Organization, was announced last week and includes Microsoft, Hewlett-

were not available to comment on if Sun plans to join the effort, a company spokesman says.

The list of standards includes XML, Simple Object Access Protocol, Web Services Description Language and Universal Description Discovery and Integration.

But while the industry has rallied around the standards, few have taken steps to ensure their products will interoperate, says Mike Gilpin, a research fellow at Giga Information Group.

"You'd be surprised how little interoperability there really is despite standards," says Gilpin, adding that many companies support common standards but use them in proprietary ways. "Two different companies can build a Web service, each one following the same specification yet using different options, and those services would not be able to talk to each other."

Web services have been touted as a way to let applications of different types and from different vendors communicate with each other in a common way over the Internet. In the business world,

**“You'd be surprised how little interoperability there really is despite standards.”**

**Mike Gilpin**

Giga Information Group

Packard, IBM, BEA Systems, Oracle, Intel and SAP.

Absent from the group is Sun, creator of Java and one of the most prominent companies developing new tools and software for Web services. Sun executives

## Got standards?

The Web Services Interoperability Organization ([www.ws-i.org](http://www.ws-i.org)) has been launched with big-name backing.

### Goals:

- Provide implementation guidance to help customers with Web services adoption.
- Promote interoperability among Web services across platforms, applications, and programming languages.
- Articulate a common industry vision for Web services interoperability.

### Major players:

Forty initial members include IBM, Microsoft, BEA, Intel, Hewlett-Packard, Accenture, Oracle, Iona Technologies, Compaq, Groove Networks, Reuters Group, Ford and DaimlerChrysler.

Web services could allow a company to automatically share data with partners in its supply chain.

To overcome the problem of implementing standards in different ways, the group plans to create a variety of test suites that will let vendors and customers make sure their software interoperates. Tests will be self-administered and are intended to help uncover "unconventional usage or errors in specification implementations," the group says.

The problem is that as various

software vendors raced to keep up with the latest standards, each creating its own, slightly different implementation, according to Rod Smith, vice president of Internet emerging technology at IBM.

"Customers didn't want to wait for the standards to be done, but they expected all of us to upgrade our systems," Smith says.

*Berger is a correspondent for IDG News Service's San Francisco bureau.*

# Equinix reinforces network services

■ BY DENISE PAPPALARDO

Equinix this week is announcing a suite of services aimed at helping users reduce network costs and simplify management of multiple ISP connections.

The service provider is launching three network services for its collocation customers at its six Internet data centers:

- Intelligent Routing Service that lets customers use the least-expensive bandwidth available, providing that bandwidth maintains performance metrics.
- Managed Router Service that lets users hand off Border Gateway Protocol (BGP) management, used to balance traffic loads between multiple ISP connections, to Equinix.
- Command Center monitoring service that lets users track the performance and availability of their servers collocated at Equinix's data centers.

The company's Intelligent Routing Service lets businesses that buy dedicated Internet access

services from multiple ISPs use the least-expensive connection. That connection typically is based on a per-megabit price negotiated between the customer and the ISP, as long as the connection meets the minimum delay, network availability and jitter-performance metrics stipulated by the customer.

If that connection no longer meets the performance requirements, the system automatically reroutes traffic to another connection.

Equinix is deploying NetVmg intelligent router software within its data centers to support the service. Pricing is based on how many megabits of traffic Equinix is managing each month.

Other intelligent router vendors such as Sockeye, offer similar services for customers that use multiple dedicated ISP connections to support their networks.

The company's Managed Router Service also targets customers that use multiple ISP connections, but may not have the in-

house expertise to handle the routing support. Specifically, the Equinix service picks up the task of managing the BGP routing, which is used to manage traffic loads between multiple ISPs and to ensure redundancy in the case of a network outage.

Finally, Equinix's Command Center service employs a monitoring tool from NOCpulse that lets customers remotely monitor, manage and control applications and network devices via one portal site.

The software tool lets users monitor server uptime at any of Equinix's data centers and also lets users monitor service-level agreements.

The ability to better manage its servers and network environment, as well as improve its customer service experience, were the prime reasons why Washingtonpost.Newsweek Interactive moved to Equinix in November, says Eric Schvimmer, vice president of technology at the online publication. Since moving to

Equinix and using the NOCpulse product, Schvimmer and his team have been able to improve server uptime.

The three services are available now.

Equinix: [www.equinix.com](http://www.equinix.com)



### THIS WEEK'S QUESTION:

Which actor — he plays a cop on TV — is now pitching Nextel's service while claiming "I don't do ads"?

Answer this and nine additional questions online and you could win \$500! Visit [www.nwfusion.com](http://www.nwfusion.com) in the Search box.

[www.nwfusion.com](http://www.nwfusion.com)

## NetworkWorld

EDITORIAL DIRECTOR: JOHN GALLANT  
EDITOR IN CHIEF: JOHN DIX

### NEWS

EXECUTIVE EDITOR, NEWS: BOB BROWN  
ASSOCIATE NEWS EDITOR: MICHAEL COONEY  
ASSOCIATE NEWS EDITOR: PAUL MCNAMARA

### INFRASTRUCTURE

SENIOR EDITOR: JOHN FONTANA  
(303) 377-9057; Fax: (303) 377-9059  
SENIOR EDITOR: JOHN COX  
(978) 834-0554; Fax: (978) 834-0558  
SENIOR EDITOR: DENI CONNOR  
(512) 345-3850; Fax: (512) 345-3860  
SENIOR WRITER: APRIL JACOBS, (603) 742-1789  
SENIOR WRITER: PHIL HOCHMUTH

### NETWORKER

MANAGING EDITOR: TONI KISTNER, (201) 587-0124

### SERVICE PROVIDERS

SENIOR EDITOR: TIM GREENE  
SENIOR EDITOR: DENISE PAPPALARDO,  
(202) 737-7614; Fax: (202) 393-1291  
SENIOR WRITER: MICHAEL MARTIN, (201) 556-1280

### THE EDGE

MANAGING EDITOR: JIM DUFFY  
STAFF WRITER: TERRI GIMPELSON, (207) 324-1136

### ENTERPRISE APPLICATIONS

SENIOR EDITOR: ELLEN MESSMER,  
(941) 792-1061  
SENIOR EDITOR: CAROLYN DUFFY MARSAN,  
(703) 917-8621; Fax: (703) 917-8622  
SENIOR WRITER: JENNIFER MEARS,  
(608) 275-6807; Fax: (608) 275-6814  
SENIOR WRITER: KATHLEEN OHLSON  
SENIOR WRITER: ANN BEDNARZ  
STAFF WRITER: DENISE DUBIE

### COPY DESK/LAYOUT

ASSISTANT MANAGING EDITOR: RYAN FRANCIS  
SENIOR COPY EDITOR: IAN LAMONT  
COPY EDITORS: BRETT COUGH, GREG CUSACK,  
JOHN DOOLEY, MONICA HAMILTON

### ART

DESIGN DIRECTOR: ROB STAVE  
ART DIRECTOR: TOM NORTON  
SENIOR DESIGNER: MICHELLE BARBERA  
SENIOR DESIGNER: STEPHEN SAUER  
GRAPHIC DESIGNER: LISA HOVSEPIAN  
INFOGRAPHICS RESEARCHER: JACY EDELMAN

### FEATURES

FEATURES EDITOR: NEAL WEINBERG  
MANAGING EDITOR, FEATURES: AMY SCHURR  
FEATURES WRITER: SHARON GAUDIN  
OPINIONS PAGE EDITOR: SUSAN COLLINS  
FEATURES WRITER: SUZANNE GASPAR

### REVIEWS

TEST ALLIANCE DIRECTOR: CHRISTINE BURNS,  
(717) 243-3686  
SENIOR REVIEWS EDITOR: KEITH SHAW, (508) 490-6527  
REVIEWS EDITOR: MIKE AVERY  
TEST ALLIANCE PARTNERS: JOEL SNYDER, Opus One,  
DENNIS WILLIAMS, ProductReviews.com; JOHN  
BASS, Centennial Networking Labs; BOB CURRIER,  
Duke University; BARRY NANCE, independent  
consultant; THOMAS POWELL, PINT, EDWIN MIER,  
Miercom; THOMAS HENDERSON, ExtremeLabs;  
NTSXXXCAL; TRAVIS BERKLEY, University of Kansas;  
DAVID NEWMAN, Network Test; CHRISTINE PEREY,  
Perey Research & Consulting; JEFFREY FRITZ, West  
Virginia University; JAMES GASKIN, Gaskin Computing  
Services  
CONTRIBUTING EDITORS: DANIEL BRIERE, MARK GIBBS,  
JAMES KOBELUS, MARK MILLER

### NETWORK WORLD FUSION

EXECUTIVE EDITOR, ONLINE: ADAM GAFFIN  
MANAGING EDITOR: MELISSA SHAW  
EVENTS EDITOR: SANDRA GITTLEN  
MANAGING EDITOR, ONLINE NEWS: JEFF CARUSO,  
(650) 577-2714; Fax: (650) 358-4518  
ASSOCIATE ONLINE NEWS EDITOR: JOANNE CUMMINGS  
(978) 688-0109

MULTIMEDIA EDITOR: JASON MESERVE  
ONLINE COPY CHIEF: SHERYL HODGE  
SENIOR WEB PRODUCER: MARLO MATOSKA  
WEB PRODUCERS: CHRIS CORMIER, KRIS GUAY,  
KATIE WARD  
ONLINE ASSISTANT ART DIRECTOR: MEGHANA BHEDA  
ONLINE GRAPHIC DESIGNER: ZACH SULLIVAN  
ONLINE RESEARCHER: ELAINE VALOVIC

### SIGNATURE SERIES

EDITOR: BETTI SCHULTZ,  
(773) 283-0213; Fax: (773) 283-0214  
EXECUTIVE EDITOR: JULIE BORT,  
(970) 468-2864; Fax: (970) 468-2318  
COPY EDITOR: BRETT COUGH

EDITORIAL OPERATIONS MANAGER: CHERYL CRIVELLO  
OFFICE MANAGER, EDITORIAL: GLENN EASOLD  
EDITORIAL OFFICE ADMINISTRATOR: PAT JOSEFEK  
RESEARCH ASSISTANT: DEIDRA MASSENBERG  
MAIN PHONE: (508) 460-3333  
E-MAIL: first\_name\_last\_name@nwfusion.com





***You see a voicemail*** waiting on your laptop. So now you can share and respond to information however you want. It's possible when Avaya transforms your company's voice and data systems by getting them working together. Reliably. Securely. With our innovations in voice and in-depth expertise in data, you stay accessible, you stay connected. Find out why more than 90% of the FORTUNE 500® use Avaya communications to power their business, visit [avaya.com/nowtwo](http://avaya.com/nowtwo).

**AVAYA**

COMMUNICATION WITHOUT BOUNDARIES



# ASPs aim to change stripes

■ BY JENNIFER MEARS AND  
ANN BEDNARZ

These days, technology vendors are not above drastic measures to restore corporate health and prosperity. Napster, for example, is piloting a paid subscription model in an effort to gain back the users it lost when lawsuits paralyzed its free song-swapping service.

On the enterprise side, Jamcracker, eConvergent and Partnerware this week are debuting software and services that signify new directions for the respective companies.

Instead of delivering third-party application service provider (ASP) software, Jamcracker now will sell its integration platform to businesses for internal use. The company will roll out Jamcracker Enterprise 3, which is designed for large companies that want to link internal and external Web-based applications and content, says Todd Johnson, a Jamcracker senior vice president. The latest version of the XML-based platform includes enhanced security and directory synchronization capabilities, as well as portal features from Epicentric.

When Jamcracker launched in 2000, the firm billed itself as an

## ASPs in transition

These companies have moved away from an ASP business model to better capture enterprise demand.

Company	What they do now	What they did
<b>Jamcracker</b>	Provide a managed infrastructure platform to integrate disparate Web-enabled applications and content	Aggregated offerings from multiple ASPs.
<b>Partnerware</b>	Provide channel management software and professional services	Offered hosted channel management services
<b>eConvergent</b>	Sell licensed software for customer data integration	Provided integrated and hosted CRM applications from third-party vendors
<b>Interliant</b>	Offer managed messaging, managed hosting, Web hosting, managed security services, professional services	Delivered ERP and e-commerce applications
<b>TeleComputing</b>	Provide infrastructure for service providers to deliver Web-based applications	Offered hosted Microsoft-based applications

ASP aggregator. It did not host applications itself, but instead acted as the conduit through which midsize companies could receive a variety of hosted applications from ASPs and other Web-based software providers.

With the ASP market failing to grow as quickly as expected, Jamcracker executives opted to change their strategy and instead use the technology they've created to help customers handle their growing application

integration requirements.

Similarly, eConvergent's expertise in integrating different applications was a factor in its conversion from service provider to software developer. Previously, eConvergent integrated and hosted customer relationship management (CRM) applications from third-party vendors including E.piphany and Kana; this week the company is releasing software for customer data integration.

Meanwhile, Partnerware is trading in its hosted channel management offering for a combination of packaged software and professional services.

For Partnerware, the decision to move from being an ASP to an enterprise software vendor came from the top. Former Tivoli Systems and IBM executive Donna Troy took over as CEO last March and initiated an overhaul of the company's management team and its product line.

The ASP offering wasn't strong enough for large companies, Troy says. With Partnerware TCX Insight, the company's rebuilt Java-based product, a customer can deploy the modules it needs to manage relationships with its indirect sales channel, including resellers, distributors and retailers. Coupled with Partnerware's TCX Foresight professional services, the channel management software can be custom-configured and integrated with a firm's CRM and enterprise resource planning (ERP) applications.

### Familiar territory

Jamcracker, eConvergent and Partnerware are not alone in redefining their business models, especially among ASPs battling to stay in business.

Jessica Goepfert, an analyst at IDC, says many ASPs are reshaping and fine-tuning their strategies. Corio and USInternetworking recently announced plans to offer their application management expertise in corporate data centers.

Analysts say the modifications

make sense, particularly for Jamcracker. "With the slow end-user adoption of even one ASP service, the demand for an aggregator to pull together multiple ASP services has been pushed out even further," Goepfert says.

Last May, TeleComputing, one of the first ASPs when it launched in Norway in 1997, decided to alter its U.S.-based service to focus on service providers. So in the U.S. instead of delivering hosted Microsoft-based applications to corporations, as it still does in Europe, TeleComputing is licensing its automated provisioning technology, called TECOS, to service providers that want to augment revenue with ASP services.

Interliant is another ASP that changed focus last year, trimming its offerings in response to the difficult economic conditions. Interliant CEO Herb Hribar blamed the slow adoption of the ASP model as he announced plans to stop offering high-end applications such as ERP, CRM and e-commerce. Interliant now focuses on areas where it had seen greater demand: managed messaging (including Lotus Domino and Microsoft Exchange), managed hosting, Web hosting, managed security services and professional services. ■

## Sun promises Linux push

■ BY DENI CONNOR

SANTA CLARA — Sun's promise to drive Linux deeper into its product lineup should be welcome news for network executives, say users and analysts who see the open source operating system as an affordable alternative to Solaris for low- to midrange applications.

While Sun officials declined to discuss details of each Linux-related product before a formal announcement in the second quarter of this year, they did say the plans include:

- Distribution of a version of Linux.
- Porting its Sun ONE application suite to the platform.
- Introducing a series of entry-level single- and multiprocessing x86-based servers for single applications such as Web serving and caching.
- Using GNOME software as the standard desktop interface for Solaris.
- Creating an enhanced set of developer tools.
- Supporting Linux servers attached to Sun StorEdge arrays.

Analysts say Sun's strategy is aimed at customers who are being wooed away from Solaris by the money they can save deploying applications on low-cost Intel servers.

"Linux has made more inroads in the market by wiping out Unix on the low end than it has Windows," says Bill Claybrook, an analyst for the Aberdeen Group. "Sun is losing customers to Linux. [Customers] don't want to run Linux on Solaris on SPARC. They want to run them in native mode on Intel."

Claybrook says Sun wouldn't be making such a big Linux move if that wasn't the case. "No one is using Solaris on Intel," he says. "Sun knows that — there are about a million copies of Solaris for Intel out there that are not being used in production."

The introduction of Linux servers based on the x86 architecture may help Sun keep its Solaris customer base.

Amerada Hess, an oil exploration company in Houston, migrated several applications from Solaris and Unix to Linux in the past two years. "Basically there was a significant cost savings from what we were using in the past to what we are using today," says Jeff Davis, a senior systems programmer at Hess.

"We were able to move from proprietary Unix vendor hardware to off-the-shelf Intel-based hardware and off-the-shelf Internet software," Davis says. He says he prefers to use Linux, but will use Solaris for applications that haven't been ported to Linux. ■

NetworkWorld  
**200** Stand  
and be  
counted

Network World is  
officially launching the  
data-collection process  
for the Network World  
200 — our annual list of  
the industry's 200  
largest and most  
influential companies.

If your company is  
public, has revenue of  
more than \$50 million  
and is a network player,  
send a description of  
your company's  
products and/or  
services, your Web  
address and contact  
information to  
nw200@ldg.com. It's  
not necessary to  
forward any other  
information at this time.





## Managing the storm of enterprise data

Regardless of which enterprise applications you're running, Network Appliance™ storage solutions will handle the raging flood of data you're facing. Our proven record of data management and availability ensures that strategic applications like Oracle®, SAP®, and PeopleSoft® are protected and performing at their peak. Our systems scale up fast — adding 12TB takes about 15 minutes. And our Center-to-Edge™ architecture ensures that you get information when and where it's needed—more efficiently and more effectively. The result is a proven enterprise storage solution capable of reducing total cost of ownership by 75%.

To learn more about the NetApp strategy for managing enterprise data storage, visit us at [www.netapp.com/storm](http://www.netapp.com/storm).



**NetworkAppliance®**

The evolution of storage.™



## VC survey

continued from page 1

lobbying group with 500 members, including IBM, Microsoft and Novell. "It's going to be a tough year, but various indicators that I tend to look to and trust ... have bottomed out. So that's good news."

"It's going to be a slow recovery," says Bill Collatos, managing general partner at Spectrum Equity Investors, which specializes in communications start-ups. "I think the worst is over. The shakeouts and [low] valuations have happened. There are still companies that are lingering that won't make it, but they'll get flushed through this year. I think some cautious bets should be made this year."

The latest venture capital data indicates that investments in network start-ups are settling at \$4 billion per quarter. This comes amid other promising economic news, including a drop in the unemployment rate and an increase in manufacturing activity during January. Many economists predict an overall recovery will begin soon.

Analysts say the network industry's recovery depends on how quickly and to what extent chief executives loosen their grip on IT budgets and let network executives upgrade hardware, add bandwidth and roll out applications. One possible sign of that trend starting was last week's announcement of higher-than-expected earnings by network bellwether Cisco, although its stock price dropped anyway amid continued investor jitters.

Gartner foresees few major changes to corporate networks in 2002. The consultancy says network executives will continue to invest in technology that improves productivity, reduces costs and has a quick return. Among the likely investments are security, storage and Web-based applications.

"Most companies are not looking at doing anything internally unless there's a 20% return on investment in the first year," says Dave Neil, a vice president at Gartner. "If that is the situation, then companies are willing to spend money on new applications or infrastructure."

Neil says one of the exceptions to this rule is network security. "Companies will continue to invest where there's a threat to the enterprise...but these are not going to be multimillion dollar purchases," he adds.

With the macroeconomic news improving, network executives seem ready to make modest investments in infrastructure and applications.

Carlson Hospitality Worldwide is encouraging owners of its 700-plus Regent, Radisson and Country Inns and Suites hotels to upgrade internal data network links and upgrade to high-speed Internet access for guests.

"We are in the process of doing a complete broadband data network upgrade to our Radisson and Country Inn brands," says Jim Grimshaw, director of hotel systems. "Some of our smaller properties and [ones in] tertiary cities on slower dial-up lines are now

hardware and software at a faster rate than is allowed currently. The tax code changes would have applied to purchases made after Sept. 11. Proposals differed on how much extra depreciation would be allowed and for how many years.

By accelerating the depreciation of network gear, lawmakers would have given corporate IT buyers a discount on their purchases. Industry observers say these tax code changes would better reflect the modern business environment, where high-tech equipment quickly becomes obsolete after purchase.

The death of the economic stimulus package is "very unfortunate,"

ly double the amount invested before that bubble. These figures are from a special analysis of quarterly venture capital data compiled for *Network World* by PricewaterhouseCoopers, the National Venture Capital Association and Venture Economics.

According to the MoneyTree Venture Capital Survey, more than 460 network start-ups received an average of \$8.75 million last fall. Sixty network start-ups closed deals worth \$20 million or more. Among the hot areas for investment were enterprise-class software, security and Internet infrastructure.

The latest venture capital figures follow five quarters of steep de-

"We're still more than double what we saw in 1998 and well above historical norms," Leteroff says. He adds that "the level of activity in the first quarter [of 2002] so far is very encouraging."

Among the largest deals of the quarter was \$62 million invested in Cogent Communications, which provides high-speed Internet access to multitenant buildings. Cogent CEO Dave Schaeffer says the company's roster 4,000 corporate customers was a factor attracting venture funding and an additional \$99 million in debt financing last quarter.

"We see extremely strong demand because of the radical pricing we bring to the market," Schaeffer says.

Cogent offers 100M bit/sec Internet service for \$1,000 per month. This service is about 65 times the bandwidth of a T-1 line, which costs about \$1,400 per month.

"Because our service is an [upgrade] in terms of quality and reliability, and it's less expensive, we think we're going to have a very good year," Schaeffer says. "But the market in general will continue to be a tough one."

Despite their cautious outlook for this year, experts remain bullish on the long-term prospects of the network industry.

Mark Heesen, president of the National Venture Capital Association, predicts that the level of investment this year won't match the record-breaking year of 2000. "But those were unrealistic levels. We do see some conservative growth throughout this year, and that's very good news."

Spectrum Equity's Collatos has noticed modest increases in follow-on investments for existing portfolio companies and new, early-stage investments. However, he says most of the investment is geared toward evolutionary rather than revolutionary network technologies. He blames the collapse of the competitive local exchange carrier market for this shift.

"I see evolutionary changes, from 10G [bit/sec] to 40G bit/sec, in the circuit infrastructure. I see increasing voice traffic in the IP environment. But the revolutionary stuff — the construction of the last-mile broadband to the home ... and the transition from traditional electrical to optical switches — will not happen this year," Collatos says. "That's going to take a long time." ■

## Top 10 deals

Here's where the biggest chunks of venture funding went during the fourth quarter.

Company	Location	Funding	Description
<b>Cogent Communications</b>	Washington, D.C.	\$62M	Building-based Internet access
<b>SS8 Networks</b>	San Jose	\$62M	Signaling technology for the Internet
<b>Telica</b>	Marlborough, Mass.	\$60M	Telecommunications equipment
<b>Groove Networks</b>	Beverly, Mass.	\$54M	PC/Internet communication software
<b>Zambeel</b>	Fremont, Calif.	\$52.6M	Storage systems
<b>Primarion</b>	Tempe, Ariz.	\$47M	Mixed signal offerings that increase bandwidth
<b>Innovance Networks</b>	Piscataway, N.J.	\$45M	Photonic network technology
<b>Avolent</b>	San Francisco	\$40M	Internet billing and invoicing software
<b>Callidus Software</b>	San Jose	\$40M	Performance system applications
<b>Xanoptix</b>	Merrimack, N.H.	\$39M	High-speed optical connection products

SOURCE: PRICEWATERHOUSECOOPERS/VENTURE ECONOMICS/NATIONAL VENTURE CAPITAL ASSOCIATION MONEYTREE SURVEY

going to fractional T-1s, DSL and ISDN-type connections. We're going to a minimum standard of 128 kilobits [per second]."

Grimshaw says Carlson's hotels increasingly use centralized applications, the Internet and e-mail, which is driving the need for a more powerful data network.

"The little capital expenditures that are required will be well returned over time," he says.

The Senate's decision to end its debate on economic stimulus legislation was a blow to corporate IT buying plans such as Carlson's. Despite President Bush's appeal in his recent State of the Union address, Senate Democrats and Republicans couldn't agree on a bill designed to improve the economy through a combination of tax cuts and unemployment assistance.

Proponents of an economic stimulus package supported changes to the tax code that would have let companies depreciate investments in network

ITAA's Miller says. "It would clearly have accelerated spending on hardware, telecom and Internet-related software because now the depreciation schedule in the tax code is way out of line with the useful life of these products. CFOs who are unsure about spending money on updating routers or software would have been tipped toward that direction if they were told the product was essentially on sale."

Such tax breaks would "certainly influence the next decisions we need to make in terms of how quickly we scale up our data network infrastructure," Carlson's Grimshaw says.

On a more positive note, venture capital invested in start-ups appears to have stabilized. A key indicator of the health of the network industry, the amount of these investments leveled off at \$4 billion during the fourth quarter of 2001. While that figure is off 73% from the high-water mark of the Internet boom, it's still rough-

clines. Investments peaked in the second quarter of 2000, when \$14.7 billion was poured into 939 network start-ups. The amount invested and the number of deals dropped steadily until the third and fourth quarters of 2001, when \$4 billion was invested in each quarter.

"Venture investments are showing good signs of recovery," says Tracy Leteroff, global managing partner for the venture capital practice at PricewaterhouseCoopers. "Despite the tough economy and the events of Sept. 11, we see activity across the board in venture funds, and we hear that the climate is improving. We think we have bottomed out and are clearly on the road to recovery."

The survey reports total investment in network start-ups during 2001 surpassed \$20.8 billion. This compares with \$53.5 billion in 2000 and \$22.9 billion in 1999. Moreover, last year was the third-best year for venture capital investments in the network industry.



Get more information online.  
DocFinder: 8060  
www.nwfusion.com



**Some things are destined to succeed...**



**...sharing files via e-mail isn't one of them.**

**Introducing the Xythos WebFile Server 3.2**  
**Internet-enabled file management for the enterprise**

- **Ultimate File Access** - anytime, anywhere, from your browser or existing desktop applications
  - **Standards Based** - the ultimate WebDAV file server
  - **Safe and Secure** - supports existing client and server software
  - **Easy Implementation** - works with existing network and storage standards
  - **Lower Costs** - increase productivity as you reduce your storage management costs
- **Free IDC/Xythos Whitepaper** - discover the best internet-enabled file management software for your company

Call 1 888 4XYTHOS (1 888 499 8467) or visit [www.xythos.com/webfile64](http://www.xythos.com/webfile64)

**Xythos**  
software, Inc.



# Palm OS to boast full Web browser

■ BY LINDA LEUNG

Later this year, users of Palm OS devices for the first time will get a fully equipped Web browser with the Palm OS operating system that will provide access to all things Web.

Palm OS 5 is being hailed by PalmSource executives as the version of the operating system that will "fuse personal and professional users." For network managers, the new operating system promises vastly improved security and built-in support for IEEE 802.11b wireless LANs. A doubling of screen resolution, to 320-by-320 pixels, will make the Palm more suitable for business-class applications.

But many of the advanced features will be missing from the first release of OS 5, due this summer. They may be included by year-end.

For example, the OS 5 security enhancements include support for certificate management and software code signing, which lets software run only if it has been digitally signed by a known and trusted entity. The technology is designed to prevent rogue software from running. But neither of these changes will be available until some time in the next two years, says Steve Sakoman, chief product officer of PalmSource. PalmSource is licensing the browser from a third party that he declined to name.

The initial OS 5 release will offer a VPN option. Using this option, companies could create a secure, encrypted connection between a Palm OS 5 client and a corporate network. This option will be included in a distribution early this summer.

Support for the Java Virtual Machine, which will let Palm OS 5 handhelds natively run any Java application, will be available later this year.

Also missing from the initial release will be support for the emerging IEEE 802.11a wireless LAN standard, up to 54M bit/sec over 5-GHz bandwidth, because of a lack of demand from users, Sakoman says. "Almost all product deployment [now] is on 802.11b, which is supported by a lot of established chips," he says. PalmSource says it will wait for market demand for 802.11a before it is included in a later version of the platform.

The new operating system will feature a built-in emulator, so users can run Palm OS 4 applications on OS 5 devices. If developers have followed Palm's published set of application programming interfaces for OS 4, applications should run unmodified, Sakoman says. Palm executives estimate that 80% of existing programs will run on devices using the new operating system.

Currently, users of wireless Palm devices access specially created Web sites that are part of the company's Palm.net network. The information on these sites is formatted using Palm's Web clipping technology, which eliminates unneeded graphical elements and optimizes the resulting page for Palm's small screen. Some Palm OS

licensees, such as Handspring with its Blazer browser, let users access the Internet through a proxy server.

Sakoman says Palm OS 5 users should expect a browser more closely aligned with the operating system.

"We will be shipping a Web browser with the platform later this year that will allow people to run wild on the World Wide Web. Unlike HandSpring's Blazer, it will not be proxy-based," he says. ■

**The new operating system promises vastly improved security and built-in support for IEEE 802.11b wireless LANs.**

## Sniffer

continued from page 1

Symantec (through its Axent acquisition) have jumped into the early lead in the \$500 million market, observers say Network Associates should prove to be a competitor with its new strategy.

With the advent of dangerous computer worms, the IDS market has a lot in common with the antivirus market, where Network Associates is the leader and generates much of its \$834 million annual revenue. Both antivirus and IDS businesses are constantly monitor for threats and update customers' software to recognize those threats.

Network Associates has been talking up the importance of returning to the IDS market for months in meetings with analysts and others, with Sniffer Technologies President Baku Mehta pointing out it could be done by adding IDS to Sniffer.

Network Associates' infusion of IDS technology into Sniffer starts in a small way this week, with the unveiling of Sniffer Investigator, which is an \$8,000 software/laptop computer combination that inspects and analyzes 280 protocols and produces reports based on that information. The device comes with filtering software that will watch for certain worm and Trojan horse threats, such as Nimda and MyParty.

"This filter won't do eradication of worms, but it will recognize them in the frame, and trigger an alert," Van de Groenekan says. "For small and midsized businesses that can't afford a full-fledged IDS, this will provide alerts for them."

Network Associates preinstalls the software on the laptop

## Free-speech lawsuit filed against Network Associates

The New York State attorney general has charged that Network Associates is violating the consumer's First Amendment right to free speech because language pinned to most of the vendor's software diskettes demands that no benchmarking or public reviews be done without Network Associates' permission.

The offending language, associated with Network Associates' firewalls, antivirus software and other security products in the past, specifically says that customers "shall not disclose any benchmarking tests or publish reviews of products without Network Associates' consent."

At a press conference last week, Attorney General Eliot Spitzer said the state is demanding Network Associates renounce the wording or face a court fight. Spitzer said his office has met with representatives from Network Associates over the past few months to get them to change the wording on the software diskettes to his satisfaction, but to no avail.

For its part, Network Associates general counsel Kent Roberts says the rationale for having legal wording about "benchmarking" and "consent" is that Network Associates wants to ensure that reviewers are using the most up-to-date version of the software.

As evidence in the case, Spitzer cited an email exchange between Network Associates and *Network World* in July 1999 in which the vendor claimed *Network World* had violated its license restrictions in a firewall product review. *Network World* is not a party to the lawsuit.

(For more on this story, see [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8058)

— Ellen Messmer

because it works best on dedicated hardware where other applications don't interfere, he says.

Network Associates intends to add IDS modules to its Sniffer Basic and Pro products later this year, but the biggest overhaul is expected to be for the Sniffer Distributed product, which is used mainly by large companies.

Sniffer Distributed relies on protocol analyzers that sit across a network and present "big picture" views of traffic flows and network usage to a central monitor. Network Associates says it has yet to determine whether to roll out a new Sniffer Distributed with built-in IDS capabilities or just add software to the existing line.

Some customers are skeptical of Network Associates' plans.

Adding IDS into Sniffer "on the surface might appear to be a good decision," says Donald Woeltje, network manager with St. Elizabeth's Hospital in Bellevue, Ill. "But you can bet that in doing so, they are going to raise the price of the product again." Or, he speculates that the company will introduce a new edition of Sniffer that won't be covered under existing maintenance agreements.

While some beta users like Sniffer Investigator, they balk at having to buy a separate laptop. "I can't justify that when we buy new laptops every year and a half," says Jeff Talamini, vice president of IT at ISP LANLine Communications, in White Plains, N.Y. ■

## IDS history lesson

**How intrusion-detection systems have evolved at Network Associates:**

**April '97:** Network General, maker of the Sniffer protocol analysers, form a partnership with WheelGroup to develop IDS products eventually sold under the CyberCop name.

**Dec. '97:** McAfee Associates and Network General merge, becoming Network Associates.

**April '01:** Facing a net loss of \$24.3 million for Q1, Network Associates axes most of the CyberCop products.



**Feb. '02:** Network Associates' Sniffer Technologies division announces plans to add intrusion detection into its Sniffer line, which the company says has a 100,000-user installed base.



**More online!**

More on Palm's move into the enterprise.

DocFinder: 8065



# Infrastructure

■ TCP/IP, LAN/WAN SWITCHES  
 ■ ROUTERS ■ HUBS  
 ■ ACCESS DEVICES ■ CLIENTS  
 ■ SERVERS ■ OPERATING SYSTEMS  
 ■ VPNS ■ NETWORKED STORAGE

## Short Takes

■ **SANcastle Technologies** has rolled out a gateway that allows customers to bridge Fibre Channel networks with Gigabit Ethernet networks.

SANcastle's **GFS-2** gateway is a rack-mountable 1U (1.75-inch-high) device that provides a point-to-point connection between the networks. In a typical configuration, two GFS-2s would connect remote SANs over the WAN or metropolitan-area network for replication capability.

The GFS-2 gateway is shipping now for \$15,000. [www.sancastle.com](http://www.sancastle.com)

■ A lack of **blade server standards** may hinder implementations of the space-saving devices, according to a study released last week by Gartner.

Even with the potential user concern over a lack of compatibility, the ever-growing demand for server density (the ability to cram servers into as small a space as possible) will keep the worldwide blade server market growing from an estimated 84,810 units shipped this year to more than 1 million shipments by 2006, Gartner says.

Blade servers, which first hit the market last year, are servers contained on a card. The server cards — the so-called blades — can be installed in a chassis that has multiple slots, rather than installing servers into a rack cabinet one chassis at a time.

Potential users may be discouraged if a company's blade server appears to be proprietary, Gartner says. Rack-optimized servers have a track record for working with systems from different vendors, and the blade servers don't.

Currently, a lack of compatibility exists between blades from different vendors. Companies such as Hewlett-Packard, FiberCycle and RLX Technologies have already entered the blade server market. In January, HP released a Compact PCI blade server that runs the Linux operating system.

## Siemens unveils remote VoIP gear

Upgraded, renamed HiPath switch can support up to 100,000 users.

■ BY PHIL HOCHMUTH

Taking aim at enterprise voice-over-IP leaders Cisco and 3Com, Siemens last week unveiled several enterprise IP voice products aimed at helping traditional PBX users migrate to converged networks.

With some hardware and software upgrades, Siemens is recasting its HiCom small and midsize phone switches into the company's HiPath line of IP PBXs. The HiPath 3000 and 4000 switches could help businesses connect remote offices with disparate phone systems into a centralized, IP-based voice network, while supporting more users than Siemens' previous "IP-enabled" HiCom PBXs.

With operating system and processor upgrades to the HiCom 150 and 300, Siemens says its new HiPath 3000 and 4000 can scale to 1,000 and 100,000 users, respectively. This is a big jump in scale from the HiCom 150 and 300, which topped out at 500 attached stations.

The HiPath products consist of the same chassis as the HiCom boxes, with a faster processor and software that let the chas-

### Taking the HiPath

Siemens' hardware/software upgrades for the HiCom 150 and 300 PBXs provide a variety of voice-over-IP features, including:

- Upgrades HiCom 150 and 300 PBXs to full IP or IP/circuit-switch mix.
- Support for up to 100,000 users in a 64-node cluster.
- Management for HiPath clusters as a single system.
- OptiPoint 500 IP phones with in-line power support and management tools.



HiPath 3000

sis switch and maintain phone connections over an all-IP network. Line cards can still be added to the boxes letting them support circuit-switched Siemens phones and can be connected to a Siemens phone network with a mix of IP and IP PBX hardware.

While Siemens is pushing the all-IP aspects of the new products, customers such as Chuck Wasson, vice president of technology for Citizens' Bank in Flint,

Mich., are looking to meld the circuit-switched and voice-over-IP technology.

Wasson needs to connect with a single phone network 64 banks that his company acquired in Iowa, and is looking to do it with frame relay connections that can carry data and voice traffic.

By putting voice on the IP WAN, Wasson says, "we're looking to address problems that are keeping us from doing business."

See Siemens, page 16

## Quick Eagle launches WAN access box with service-level verification pack

■ BY TIM GREENE

SUNNYVALE, CALIF. — Business customers looking for a way to track carriers service-level agreements could try a new hardware platform and software from Quick Eagle that monitors performance of T-1 links.

The company says its new 4230 Access Platform can save customers money by combining the functions of individual devices that sit between corporate sites and service provider networks. With the appropriate software, it can function as a router, multiplexer, inverse multiplexer, DSU/CSU and monitoring probe.

The device comes configured as an enterprise WAN router and multiplexer with a single T-1 port, but it also contains software that can be activated to turn on a second T-1 port. The software then lets

these ports run as independent 1.5M bit/sec connections or be bonded into a single logical 3M bit/sec pipe. The individual T-1 ports can be adjusted to support fractional T-1 services.

The device can be configured so each T-1 is connected to a separate service, such as two different ISPs. Or both T-1s can be connected to the same provider as independent T-1s. The two links also can be bonded together using the multilink point to point protocol.

The 4230 offers the same number of ports as a Cisco 1720 router, but the Cisco box is modular, so supports more WAN interfaces such as DSL, ISDN and Ethernet in addition to T-1. The Cisco box also supports priority queuing. The Cisco 1720



The Quick Eagle 4230 Access Platform can function as a DSU, WAN router and T-1 multiplexer or inverse multiplexer.

costs more, at about \$2,200 vs. about \$1,700 for Quick Eagle's 4230.

The Quick Eagle device supports Java-based management and monitoring software called ChoiceView that runs on any network-attached PC. It can verify and track a variety of parameters that can be used to help customers determine whether or not service providers are living up to SLAs for either frame

See Quick Eagle, page 16



WIRED  
WINDOWSDave  
Kearns

"As new discoveries are made, new truths disclosed, and manners and opinions change with the change of circumstances, institutions must advance also and keep pace with the times."

—Thomas Jefferson

Whenever I'm in Washington, D.C., I try to stop by the Jefferson Memorial. It's one of the most peaceful and tranquil places in that hub of world civilization. Last month I took a couple of hours out of the ComNet Expo to wander over to see Mr. Jefferson, and noticed the above quotation chiseled alongside the more

## Keeping up with the times

famous passages from the Declaration of Independence.

Jefferson was speaking of changes in laws and civilizations, but his thoughts are adaptable to our rapidly changing electronic world. In particular, I'd ask my peers — those who have been involved with computers since the late '60s or early '70s — to realize that the small, closed world we knew as the Internet has gone mainstream, changed and moved on. We'd better move along with it.

For example, consider the venerable e-mailing list. You know, those associations of like-minded people, people with the same hobby or people in a particular profession (such as network managers) — even people in an extended family, a neighborhood or a school. There are tens of thousands of mailing lists circulating anywhere from one or two messages per year to those with dozens — even hun-

dreds — every day.

On many of those lists, not a week goes by without some old graybeard denouncing a new member of the list for using something other than pure, text format to post a message. You see, to these people it's a mortal sin to use HTML mail, a venial sin to use Rich Text Format, and a step on the road to Hades if you use MIME. We're told it's a security issue, but it's hinted that it's an anti-Microsoft issue (evidently that's a good thing). And we're still being told its because some members of the list use e-mail readers that can only handle text.

Would you be willing to give up color TV because some people only have black-and-white models? Should markets carry fully only cooked foods because raw foods can harbor germs?

The world is always changing, the electronic world is constantly changing. Those who can't keep up with the changes, those

who don't adapt, will be left behind.

*Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley. He can be reached at wired@vquill.com.*

### Tip of the Week

**C**omNet is a show for serious hardware junkies, which doesn't include me. Outside of ComNet, the best thing I saw was **my new granddaughter (Hi Gillian!)**, who arrived on the scene midconference. Real life, it's often more fun than the virtual kind — try it out!

## Dell hooks up with Cray to offer server clustering

■ BY ASHLEE VANCE

Dell is not the first company that comes to mind when talking about supercomputers, but last week the company launched a new server-clustering program and a partnership with Cray to strengthen its position among vendors selling large groups of networked computers.

IBM, Hewlett-Packard and Silicon Graphics top the sales charts as the world's leading supercomputer companies, selling hundreds of servers to organizations that need to pore through large amounts of data and perform complex calculations. A number of industries from the telecom sector to aerospace pay millions to harness the power of these tightly linked computers.

The company plans to offer new precertified configurations of servers in an effort to beef up its share of the high-performance market. It has started selling groups of eight, 16, 32 and 64 PowerEdge servers that can be clustered to work as one system. In addition, Cray, one of the traditional leaders in the supercomputer market, will offer users software and services for Dell servers, as part of a separate OEM agreement. An eight-server cluster from Dell will start at \$75,000.

Dell has partnered with MPI Software Technology and Paralogic for the middleware and clustering software that will run on its systems. With the help of these two partners, Dell is targeting customers looking to set up clusters of 128 servers and fewer. The packages from Cray are aimed at clusters with more than 128 servers, says Karl Chen, director of enterprise software with Dell.

One customer already running a large cluster says Dell was able to move up from

its roots on the low end and handle setting up a more complex network well.

Sandia National Labs in Albuquerque, N.M., has linked 128 Dell workstations as part of a project to simulate how nuclear weapons behave in the real world, says Milt Clauser, project leader for the visualization cluster at Sandia. The company used some homemade software along with other vendors' applications to run the cluster.

While Dell may not have a dominant position in high-end computing, the company is well known for low-cost hardware, and this was a driving factor in Clauser's decision to go with the company.

"Price was a major consideration," Clauser says.

For larger clusters of computers, one analyst says the partnership with Cray will be key for Dell's efforts to be seen as a viable high-performance computing choice.

"I think if Dell were to get into this space on their own, they would fall flat on their face," says Tom Manter, research director at Aberdeen Group. "They realize that partnering with a company with name recognition will open doors for them."

Even with Cray's software on its side, Dell likely will need a few years before it secures a prominent place in the high-end computing market, Manter says.

It may take Dell some time to solidify its spot with clustered computers, but the company sees supercomputing and clustering as keys to pushing its hardware further, Chen says. The company says its low-cost hardware will give it an advantage over rivals such as IBM and Sun.

*Vance is a correspondent with the IDG News Service's Boston bureau.*

### Quick Eagle

continued from page 15

relay or IP services. The device supports the standard Frame Relay Forum set of parameters to measure the quality of frame relay services.

ChoiceView can track the top users of a link, status of the link and how much of it is being used. This information can be used to plan for future bandwidth needs.

ChoiceView software can also be used

to configure 4230 access platforms from the PC running the software.

One drawback is that the software doesn't let users prioritize traffic. Quick Eagle has such traffic-shaping on its drawing board, but there is no set time for when that capability will be ready, says Alan Rice, Quick Eagle's vice president of marketing.

Access Platform is available now. Upgrading it to turn on the second T-1 port costs \$700 extra.

www.quickeagle.com

### Siemens

continued from page 15

The bank branches are not integrated into Citizens' centralized voice mail system, and workers can't transfer calls among branches or dial other offices without going to an outside line.

Up to 100,000 IP and/or circuit-switched phone users can be supported by clustering HiPath 3000 or HighPath 4000 boxes together. Up to 15 HiPath 3000 and 64 HiPath 4000 boxes can link in a cluster, which can be managed as a single system. Additions, moves and changes can be made to a cluster through a Web application that synchronizes the clustered servers and replicates data to

all nodes.

Siemens also debuted a digital phone last week with the optiPoint 500 handset. The phone looks the same as Siemens' IP phone, the optiPoint 500, providing a common interface for IP and digital phone users. The new phone also comes with two Universal Serial Bus ports that can connect to a PC for computer telephony applications. An adapter is also available for connecting the phone to an Ethernet/IP connection. Software and firmware on the phones can also be configured in batches of up to 200 with a software Phone Manager application included with either HighPath system software.

The new HiPath systems will compete with IP PBXs such as the Cisco CallManager, 3Com's NBX LAN telephony platform and similar IP PBX products from Nortel, Avaya and Alcatel. Cisco and 3Com were first and second in IP line shipments for midsize to large companies' telephony systems in the third quarter of 2001, according to Phillips InfoTech, while Siemens held only 1% market share.

The optiPoint 500 phones are available starting at \$140 per set. The HiPath 3000 and 4000, both available now, cost between \$400 and \$600 per user, depending on number of users and configuration. ■



**More online!**

Read how Cisco is planning an effort to enable service providers to offer new classes of VPN and voice-over-IP services.

**DocFinder: 8044**



# Enterprise Applications

■ INTRANETS ■ MESSAGING/GROUPWARE  
■ E-COMMERCE ■ SECURITY  
■ NETWORK MANAGEMENT ■ DIRECTORIES

## Users find hosted CRM apps hit bull's eye

■ BY ANN BEDNARZ

Thriftiness and caution are leading businesses of all sizes to choose hosted customer relationship management services over more traditional CRM applications, even if the features available in a hosted service are less robust than those of a licensed CRM application suite.

CRM vendors that operate as application

service providers (ASP), such as Salesforce.com, UpShot and Salesnet, are pitching fast rollouts and \$50 to \$125 per-user, per-month subscription fees. The message is resonating with companies wary of committing to an 18-month CRM rollout with a \$1 million-plus price tag.

During a year that was dismal on many IT fronts, hosted CRM services prospered. Revenue for CRM operations services — consisting primarily of application outsourcing services — in the U.S. grew roughly 80% in 2001 over year-earlier figures, says Jocelyn Young, program manager for CRM services research at IDC. She predicts the sector will sustain that growth rate through 2006.

Marc Benioff, Salesforce.com's CEO, is a self-described "evangelist for the end of software." His company increased sales 300% in 2001 and today has 3,300 companies using its CRM services. According to a Morgan Stanley survey of 10,491 customers, Salesforce.com (27% of market share) trailed only Siebel Systems (36%) in number of customers for the first half of 2001.

"Siebel should be shaking in their boots. They don't realize how many customers they've lost," says Benioff, who, like rival CEO Tom Siebel, is an Oracle expatriate.

Keith Raffel, chairman of UpShot, says the economy is a factor in the popularity of hosted CRM services. "Companies don't have time or money," Raffel says. "Fast deployment becomes very important."

Cost and speed of implementation led the North American division of Bohler-Uddeholm to select Salesforce.com's online CRM service over software from Siebel and Pivotal. Mark Appleton, marketing support manager at the steel supplier, says the company wanted to speed communication between its 22 outside sales representatives and the internal employees making inventory decisions.

Before Salesforce.com, sales staff at Bohler-Uddeholm filed weekly progress reports by fax. Every time someone left, the company struggled to get customer information that resided with the employee, Appleton says. With Salesforce.com, information is consistent and immediately accessible. Productivity has increased 10%.



**“Siebel should be shaking in their boots. They don't realize how many customers they've lost.”**

**Marc Benioff**  
CEO, Salesforce.com

For large companies, the appeal of hosted CRM applications is convenience and time to market. "ASPs are the procrastinator's solution, especially if the IT organization is involved in other things," says Erin Kinikin, vice president and research leader at Giga Information Group.

But hosted services are not necessarily a long-term fix. For large companies, going the hosted route can be the equivalent of training wheels, Kinikin says. "A number of these companies expect that they may move that functionality in-house when they have the time and resources," she says.

Indeed, Bohler-Uddeholm in the future will migrate to SAP's CRM suite — although not because the company is unhappy with Salesforce.com, Appleton says. Rather, it's a corporate decision. Globally, the \$1.3 bil-

lion company is upgrading to a new version of SAP for its inventory and order management, and the deal includes SAP's CRM suite. The North American division will have to comply, but that upgrade is probably two years away from completion, Appleton says. In the meantime, Salesforce.com provides a comprehensive, low-cost fix to an immediate problem, he says.

**“Companies don't have time or money. Fast deployment becomes very important.”**

**Keith Raffel**  
Chairman, UpShot



services. For enterprisewide CRM, sales, marketing and customer service applications need to exchange information among themselves as well as with back-end systems such as inventory and order management. "What we've learned is that the pieces have to be interdependent to be successful," IDC's Young says.

For this reason, CRM by ASP is most appropriate for companies that want only one piece of CRM — such as a salesforce automation application that doesn't have to be fed into and out of marketing systems, Young says.

Kinikin agrees. "The more broadly the company is looking at CRM, the more advantages there are to implementing in-house," she says.

While vendors say their hosted applications can be integrated with a company's back-end systems — Salesforce.com and UpShot, for example, include XML-based APIs for exchanging data with other applications — analysts question the logic of doing so.

True enterprise integration "would mean getting IT involved," Kinikin says. "And one of the biggest reasons for going with an ASP is because IT either can't or won't get involved."

The ASP appeal has not gone unnoticed by players in the traditional CRM game — many of which have tried subscription models with mixed results. Siebel abandoned its hosted offering, Sales.com, last year. Conversely, PeopleSoft boosted its eCenter hosted services this month, partnering with Hewlett-Packard for infrastructure management.

Oracle retains its Oracle.com hosted services, but has been disappointed by customer interest. Still, Oracle says it expects half of its users to move to the

ASP model within five years.

RightNow Technologies, which offers hosted and locally deployed versions of its CRM software, suggests the way an application is designed determines its hostability. RightNow and other CRM service providers design software to be deployed over the Internet, which differentiates it from ASPs of the past that tried to fit client/server software into an ASP model. ■

### Short Takes

■ **Zone Labs** last week unveiled a package aimed at helping users administer enterprisewide security products. **Integrity** is a client/server system that places an agent on each managed desktop in a company. The agents offer the ability to block inbound connection attempts from the Internet, limit the applications that can initiate an Internet connection, and quarantine e-mail that may carry viruses or worms. The server component runs on Windows 2000 servers, while the agent runs on Windows 95/98/NT/ME/XP. One server can manage up to 2,000 desktops simultaneously, the company says. Integrity manages only Zone Labs' firewalls and the Cisco VPN 3000 Concentrator series of VPN appliances, but the company says in the future it will add the ability to work with other security products, such as antivirus software. Integrity is available now for \$80 per user, with one server license included with the purchase. [www.zonelabs.com](http://www.zonelabs.com)

■ **PoliVec** has announced the second version of its network security policy tool, **PoliVec Builder 2.0**. The tool lets administrators set best-practices policies on password usage and access to Windows or Solaris operating systems that can be checked remotely via the tool's scanner. Version 2.0 starts at \$3,000 and includes "Best Practices" templates for the federal healthcare mandate, HIPAA. Future versions are expected to include support for Linux, Novell NetWare, AIX, OS/400 and HP-UX. [www.polivec.com](http://www.polivec.com)



'NET  
INSIDERScott  
Bradner

## Crustacean security

Three of *Network World's* four cover stories on Jan. 21 were about security. The fourth mentioned security in the second paragraph. Two of the stories focused on the difficulties with using the Internet Engineering Task

Force's IP Security technology, but I seem to detect a common, and to me, dangerous thread hidden under some of the comments in the stories.

The first story that caught my eye had the headline "Debate flares over IP stor-

age security" (see [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8034). The story was about the cost in performance and dollars of including encryption in storage devices and quoted people who think there are other ways to get a secure system. The major suggestion here is the same as that implied in one of the other cover stories on "easier VPNs": that you can wall off some part of the network with a firewall of one kind or another and only protect communications outside of the firewall. Far too much of the security thinking in the corporate world is based on this crustacean model — hard on the outside, and soft and vulnerable inside.

There are three basic problems with the crustacean security model: people, penetration and perfection. Most studies over the years have shown that many — if not most — violations of network or computer security have been perpetrated or assisted by people inside the organization with legitimate access to the network. Specifically, firewalls do not protect against the people already inside the wall.

In addition, methods all too frequently have been set up to penetrate or bypass the firewall for what seem like legitimate reasons, such as installing a dial-up modem to access a special server from home. Finally, unless the firewall software is perfect and perfectly set up, holes will be found. Too often this means the corporate jewels are lying around for the picking.

But the case of IP-based storage points out a somewhat different issue. *Network World's* story on this topic rightly points out that security has not been a real concern in Fibre Channel-based storage networks because they are physically separate networks with few hosts on them. Some people think IP-based storage can be constrained in the same way. That is, at best, wishful thinking.

One of the basic results of putting an application on IP is that you are no longer restricted as to where it can be used. Fibre Channel-attached storage can be used only on the local Fibre Channel network, but an IP-attached storage device can, and will be, used from anywhere in the IP network world. Putting storage on IP means that there is no way for a storage device to know what type of environment it is running in, and so it has to be ready to deal with the case of a network with open access from the Internet (i.e., you need full security). If you don't want to deal with that reality then you should stick to Fibre Channel.

Disclaimer: Reality? Harvard?

In any case, the above are my own observations.

*Bradner is a consultant with Harvard University's University Information Systems. He can be reached at [sob@sobco.com](mailto:sob@sobco.com).*



Has the meter run out  
on your packet analyzer?

Own your tools  
Own your network

# EtherPeek NX™

Real-Time Expert Packet Analysis

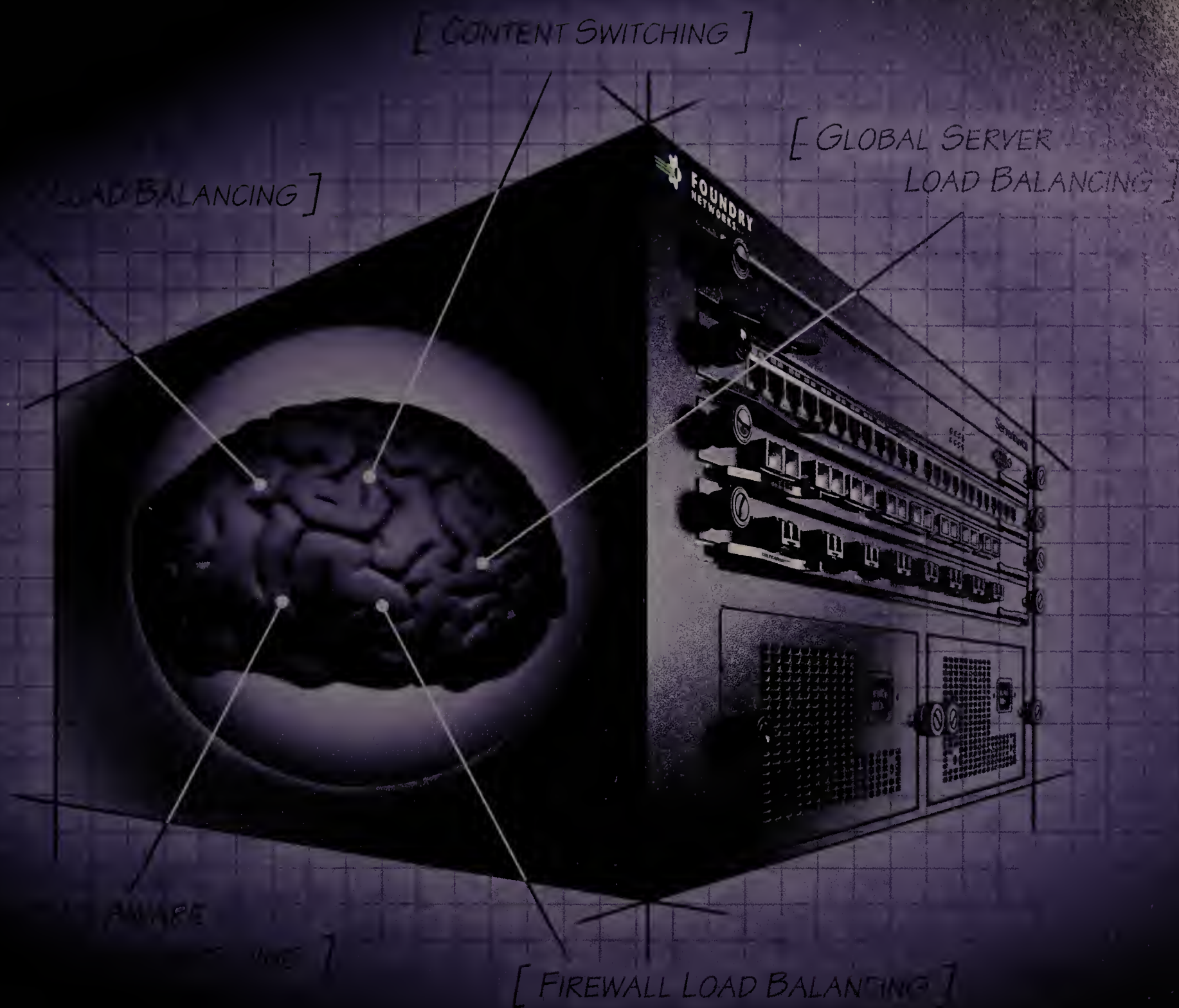
Register for our FREE  
Expert Packet Analysis Seminars

[www.wildpackets.com/nx](http://www.wildpackets.com/nx)

WildPackets  
01100111







## HOW INTELLIGENT LOAD BALANCING LOOKS INSIDE.



Perhaps the most intelligent piece of iron ever built, Foundry's ServerIron web switch is the most versatile Layer 2-7 switch purpose-built to manage your Internet traffic. It intelligently distributes traffic across servers, firewalls, caches, even across data centers—and can direct traffic based on application, server load, URL content, or cookies. Brains like this make ServerIron an essential component for your network and server farm. In fact, purchasing it could be one of the smartest moves you'll ever make. Call Foundry Networks at 1.888.TURBOLAN(887-2652), email us [info@foundrynet.com](mailto:info@foundrynet.com) or go to [www.foundrynetworks.com/nwlsi](http://www.foundrynetworks.com/nwlsi), and make the intelligent choice.





# IMAGINE ACCOMPLISHING MORE THAN YOU EVER THOUGHT POSSIBLE.



Call 1-800-TOSHIBA or visit a Toshiba reseller today. [www.toshiba.com](http://www.toshiba.com)

That's the experience of  
Toshiba Mobile Computing with  
Microsoft® Windows® XP Professional  
and Mobile Intel®  
Pentium® III Processors.

Looking to take your mobile productivity to new extremes? Then get a Toshiba Mobile Computer with Microsoft Windows XP Professional and Mobile Intel Pentium III Processors – the best choices for mobile computing. Toshiba portables with Windows XP give you the productivity you need with extended laptop capabilities, new ways of working remotely, and effortless networking. Whether you're in the office, on the road, at home, or even at the beach, Windows XP Professional protects your data and personal files, while giving you expanded capabilities to accomplish more than you ever thought possible. Just another example of minds on the move.\*

Tecra® 9000 Portable  
*The ultimate power and performance*



**Tecra 9000**

- Mobile Intel® Pentium® III Processor - M, up to 1.2GHz
- Up to six ways to connect<sup>1</sup> – integrated Wi-Fi (802.11b wireless LAN), Bluetooth™ wireless technology, Ethernet LAN, fast IR, i.Link® (IEEE 1394) and modem
- Common accessories with Portégé 4000 and Satellite Pro 6000 including Advanced Port Replicator, SelectBay devices and memory
- Secure Digital Media slot for easy file transfers with other digital devices
- Brilliant 14.1" TFT display

Portégé® 4000 Portable  
*Perfect balance of ultraportability and performance*



Satellite® Pro 6000 Portable  
*Best performance for the best price*



## TOSHIBA

Toshiba PC's use genuine Windows® Operating Systems  
[www.microsoft.com/piracy/howtotell](http://www.microsoft.com/piracy/howtotell)

1. Integrated Wi-Fi and Bluetooth technology available as options at time of order. ©2002 Toshiba America Information Systems, Inc. Portégé, Tecra, Satellite Pro and SelectBay are registered trademarks of Toshiba America Information Systems, Inc. and/or Toshiba Corporation. Intel, the Intel Inside logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Bluetooth is a trademark owned by Bluetooth SIG, Inc. and used by Toshiba under license. All other products and names mentioned are the property of their respective owners. All specifications, software, prices, and availability are subject to change. All rights reserved.



# Net.Worker

■ PRODUCTS, SERVICES AND STRATEGIES  
FOR TYING TELEWORKERS TO THE ENTERPRISE

## Not part of the cable and DSL boom?

If you're out of range, alternative broadband technologies offer a small ray of hope.

■ BY MICHAEL MARTIN

High-speed cable and DSL connections have been a godsend to small office/home office networks and teleworkers across the U.S., but unfortunately not everyone has access to a cable or DSL connection.

A variety of wireless alternatives exist for the cable and DSL-deprived, but their availability is spotty, and the technology behind the alternatives is often less proven than the relatively new cable and DSL products.

However, early last year, it seemed as if fixed wireless might provide a palatable alternative to cable and DSL in price and performance. In residential areas, fixed wireless works by transmitting data at rates similar to cable and DSL between a dish located at a subscriber's home and a nearby transmission tower. In multitenant buildings, service providers position transmission dishes on

the tops of buildings and connected tenants to the dish through wires.

With the backing of Sprint, AT&T and WorldCom, as well as many smaller regional providers, the future of fixed wireless looked bright. But late last year, those big names announced they were scaling back their plans, and some smaller providers have run into financial difficulty.

Another wireless method providers are using is the 802.11b wireless LAN standard. So far, providers such as Wayport and MobileStar have focused on two markets for 802.11b as a broadband tool.

The first is the multitenant building. "If you have a large building it makes sense to get a high-speed land line in there and then connect the tenants to the Internet through 802.11b devices," says Joe Laszlo, an analyst with Jupiter Media Metrix.

The second area 802.11b providers are targeting is the mobile user market, through deployments in places such as airport lounges and coffee houses.

Groups such as the Bay Area Wireless User Group in San Francisco and NYC-wireless in New York are also setting up open 802.11b networks that can be used by the public to get mobile Internet access and bring broadband connections to areas that might not otherwise gain fast access.

One drawback is that 802.11b transmissions can be easily intercepted and should be encrypted for security.

The 802.11b standard isn't the only mobile wireless broadband access method available. Providers can also use radio technology to provide service to customers on the move.

The now bankrupt Metricom used a microcellular data network in the unlicensed bandwidth spectrum. Using its Ricochet service, subscribers get speeds of 128K to 175K bit/sec, through a desktop modem or PC modem card.

Aerie Networks purchased the assets of bankrupt Metricom last November and is betting that Ricochet can be a success. Aerie hopes to restart Ricochet service in several markets this year, at about half of what Ricochet originally cost, putting it in line with cable and DSL pricing.

"The service could compete with cable or DSL, or it could just be a complement," says Emilie Kelly, Aerie's senior vice president of marketing.

For broadband seekers in rural locales, satellite service from a provider is an

option. There are several drawbacks to satellite service, though. For starters, it's expensive — about \$400 in initial hardware costs, \$200 for installation and a monthly fee starting at \$60 per month.

Satellite service can provide cable- and DSL-like speeds, but there is more latency because the data has to be bounced up to a satellite and then back down to Earth.

The satellite signal can also be affected by poor weather, a badly aligned satellite dish on the customer side, or by interference from other wireless signals. Because of the latency, satellite broadband won't work well for applications that require a constant connection.

"But it's still better than dial-up," Laszlo notes. ■

## GigaFast switch is a small wonder

■ BY MIKE AVERY

We assumed there wasn't anything new to report in the world of 10/100M bit/sec switches. However, GigaFast EZ500-S proved us wrong. The new device is tiny and inexpensive, and its autoup-link feature lets you connect a variety of devices using one cable.

The EZ500-S is a five-port 10/100 Ethernet switch that's smaller than most computer mice, and includes wall anchors for easy mounting. Our only complaint is that the power supply is larger than the device —



The EZ500-S's size makes it invaluable to road warriors.

hoc network. Because every port can act as an automatic uplink port, you can connect a variety of devices using one cable.

In testing, we connected devices in every combination — switch to switch, PC to PC, PC to cable modem, to gateway router — using Category-5 and crossover cables, and everything worked. We even toggled the switch, and within a second, the EZ500-S recognized the change, reconfigured its port and restored the connection. Whether you manage a small office or work on the road, the EZ500-S deserves a place on your network. ■

## NetworkWorld Review

its "brick on a leash" design plugs directly into the wall. We would prefer the power supply have a cord on each end so it could plug into a power strip.

Although the power supply is on the heavy side, a tiny switch like this could be invaluable to road warriors. Sales teams often need to have hectic presentation session in hotel rooms or any available space. The switch makes it easy for the team to hook up their computers and share the latest version of a presentation, sales figures and the like. Its rugged metal case will survive the abuse, and its low cost (\$25 to \$35) means misplacing the switch won't be a big deal.

Consultants who work on customer sites can use the switch to set up their own ad

### Short Takes

■ **BellSouth** recently announced it would offer SonicWall's SOHO3 firewall to its FastAccess DSL business customers. The SOHO3 firewall device includes antivirus and content-filtering software, and can support additional services such as network antivirus, ASIC-based VPN and authentication using digital certificates. Pricing has yet to be announced. [www.fastaccess.com](http://www.fastaccess.com); [www.sonicwall.com](http://www.sonicwall.com)

■ Aimed at securing the distributed workforce, **Zone Labs** has announced Zone Labs Integrity, a centrally managed firewall that protects all PCs on a network — on-site and remote — from hackers and malicious code. Integrity includes Web-based administration and policy management, and works with a network's existing infrastructure. Cooperative Enforcement technology lets only end-point PCs that follow appropriate firewall policy access the network. Pricing is about \$80 per user license. [www.zonelabs.com](http://www.zonelabs.com)



**More online!**

Take a closer look at our scoring of the GigaFast EZ500-S including the pros, cons, price and how we arrived at the total score of 4.8

**DocFinder: 8042**



# You designed this KVM switch

Connect servers  
with CAT5 cables

Analog KVM at  
the rack

KVM over IP access  
for the guys in the  
NOC

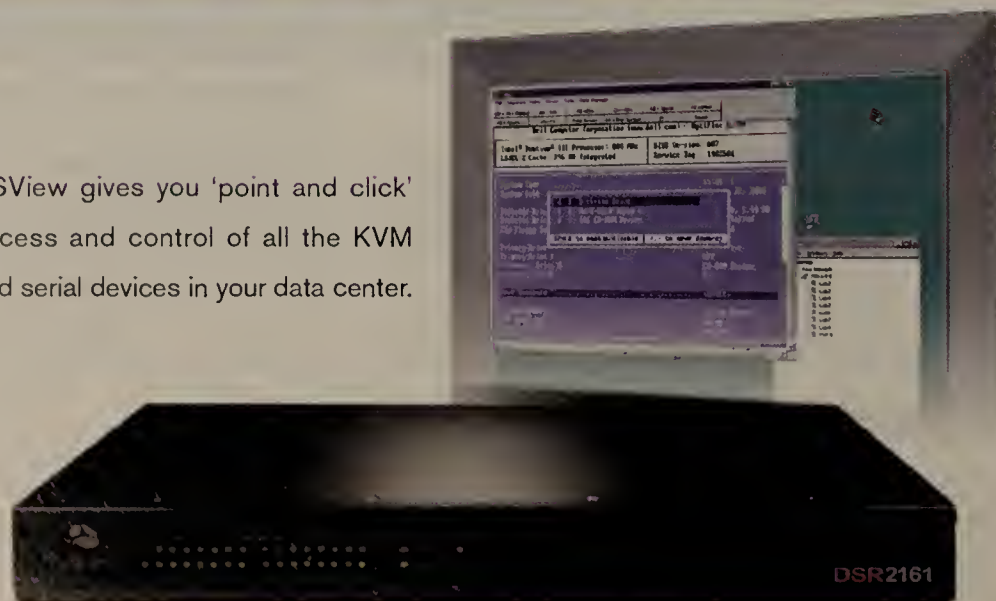
This office needs  
KVM over IP  
access too!

Toronto

- KVM access at  
the rack
- Connect servers  
with CAT5  
cabling
- Server access  
& control over IP

# We built it.

DSView gives you 'point and click'  
access and control of all the KVM  
and serial devices in your data center.



With the new DSR analog/digital KVM  
switches, your choices for access  
and control have never been better.

**See our latest designs at  
[www.avocent.com](http://www.avocent.com)**



**Avocent**  
The Power of Being There™

For a FREE Smart Server Management Guide and more information about our connectivity solutions,  
visit [www.avocent.com](http://www.avocent.com) or call 1-866-AVOCENT (286-2368).

Avocent, the Avocent logo, 'The Power of Being There' and 'KVM over IP' are trademarks of Avocent Corporation. Copyright 2001.



# Service Providers

■ THE INTERNET ■ EXTRANETS ■ INTEREXCHANGES AND LOCAL CARRIERS  
■ WIRELESS ■ REGULATORY AFFAIRS

## Outsourcers taking up the ASP mantle

■ BY JENNIFER MEARS

Large outsourcers and systems integrators have always tiptoed around the application service provider market, preferring to forge relationships that kept them behind the scenes. However, recent news from EDS that it is partnering with messaging ASP Mi8 marks a significant shift in this pattern.

That's good news for companies that have been wary of using an ASP because of questions about financial viability and longevity. With established outsourcers backing a deal, customers can feel more secure. In addition, companies benefit from outsourcers' professional services and expertise, on top of hosted

applications, from a single source.

EDS recently announced it would resell Mi8's hosted Microsoft Exchange service and plans to codevelop and codeploy additional applications, such as virtual workspaces. The partnership is interesting because EDS is taking a front-line position in delivering an ASP service to its customers, a role outsourcers have avoided.

IBM has had its ASP Prime (now xSP Prime) program since 1999, providing technical support and consulting services to independent software vendors that want to deliver wares over the Internet. KPMG joined Qwest in 1999 to launch ASP Qwest Cyber Solutions, eventually pulling out of the venture when the ASP market began to crumble. But in both cases, it was the ASP that handled customer accounts. Back-end support was the system integrators' focus.

"This is a first step toward the broader acceptance of partnerships and relationships between ASPs and myriad system integrators and services companies," Karen Moser, an analyst with IDC, says of the EDS-Mi8 relationship. "This is a bellwether for what's going to happen in the industry."

Analysts also have been skeptical about the future of ASPs. Dozens have gone out of business since the market emerged in the late '90s. In the past few months, ASP pioneers such as FutureLink and Breakaway Solutions have closed, and USinternetworking filed for

### Software as a service

**EDS is the first outsourcer to cobrand an ASP service, but outsourcers have been supporting ASPs for some time:**

- IBM launched its ASP Prime Program in 1999 to provide infrastructure support for independent software vendors entering the ASP market.
- KPMG joined Qwest in 1999 to launch ASP Qwest Cyber Solutions, but pulled financial support in early 2001.
- In April 2000 Ernst & Young partnered with ASP Corio.
- Accenture partnered with ASP aggregator Jamcracker in the fall of 2000.
- Hewlett-Packard last month partnered with PeopleSoft to provide infrastructure and services support for its eCenter ASP service.

bankruptcy protection. At the same time, though, analysts say software as a service is here to stay. The question is who will be delivering the applications.

Gartner analyst Ben Pring predicted in a recent report that software vendors, telecom suppliers and outsourcing companies

will "embrace the ASP model and utilize it as just another offering in their portfolio — one that will, over the course of the next five years, come to represent between one-quarter and one-third of their revenue."

How many pure ASPs will be left?

"Few," Pring says. "Very few."

That means companies can expect more partnerships and acquisitions among ASPs and outsourcing companies, analysts say, as well as the development of homegrown ASP services. IBM, for example, points to its new pay-as-you-go hosted offerings as ASP services.

Tim Morton, president of EDS E-Solutions, U.S. and Latin America, says more customers are demanding hosted applications, especially messaging and collaboration. EDS announced its partnership with Mi8 with a customer, Internal Association of Athletics Federations, already in hand, and claims several more are "in the pipeline."

Laurel McElreath, service line director for messaging and collaboration at EDS, says the firm has offered hosted applications in the past but that the partnership with Mi8 takes that "to a different level." Customers aren't looking for huge outsourcing packages, she says. The need is for a single service that can be implemented and deployed quickly.

"The idea was to partner with someone who could deliver a more cost-effective [service] to our clients, rather than investing in and developing the technology in-house," McElreath says. ■

### Short Takes

■ **Cable & Wireless'** acquisition of **Exodus** is a done deal. The transaction, valued at \$750 million, was announced in November after Exodus filed for Chapter 11 bankruptcy protection. Cable & Wireless is buying the Exodus brand name, intellectual property, and most of its data center and customer assets. The service provider plans to incorporate its Exodus Web hosting assets with its Digital Island Web hosting business, which Cable & Wireless acquired last year. **Bill Austin**, who was most recently chief financial officer at Exodus, will head the combined business.

[www.cableandwireless.com](http://www.cableandwireless.com)

■ Communications provider **Net-work Plus**, which serves about 75,000 customers in the Northeast and Southeast, filed for Chapter 11 bankruptcy last week. Network Plus, based in Randolph, Mass., provides local, long-distance and high-speed data services to small and midsize businesses. The company is trying to secure debtor-in-possession financing, which would allow it to continue operating in the short term. In the long-term, the company will seek a buyer, or try to reach an agreement with its lenders. [www.np1.com](http://www.np1.com)

## Sprint preps frame service with IP twist

Offering to make debut about two years after rival offerings.

■ BY DENISE PAPPALARDO

KANSAS CITY, KAN. — Sprint is readying a service designed to better handle frame relay customers' growing IP traffic loads.

Sprint's IP Intelligent Frame Relay service will support fully meshed networks that provide the flexibility of public IP networks, but without the cost of setting up dedicated permanent virtual circuits (PVC) between each site. The service will require customers to dedicate PVCs between their sites and Sprint's frame network.

The service is Sprint's answer to AT&T's IP-Enabled Frame Relay and WorldCom's Private IP services, which have been out for several years. Sprint says its delay with an IP-enabled frame offering stems from the company's focus on its now-defunct Integrated

On demand Network (ION) platform. Sprint expected ION to be the converged service for its business and consumer customers.

"AT&T and WorldCom have proven that customers want IP-enabled frame services, and Sprint is now listening to its customers," says Michael Suby, an analyst with Stratecast Partners.

Unlike AT&T and WorldCom, Sprint is bypassing Multi-protocol Label Switching technology and using virtual routing capabilities on Nortel Passport frame relay switches at the network edge to support its IP-enabled frame offering. Suby says it's too soon to say whether Sprint's architecture will provide any competitive advantage.

Sprint says users will pay the same port fees as traditional frame customers, but PVC rates will be higher. ■



### More online!

Limitations of IP-enabled frame relay. Also, why MPLS is no longer the darling of IP and ATM vendors.

**DocFinder: 8041**



## EYE ON THE CARRIERS

Johna Till Johnson



Every other week, it seems a new service provider goes belly up. The latest casualty (as of this writing) is Global Crossing, which is undergoing intensive reorganization and restructuring under Chapter 11 bankruptcy protection. But this company is hardly alone in its troubles.

Virtually every major service provider in the world — including the blue-chip inter-exchange carriers — has fessed up to facing serious challenges.

According to Wall Street, this is the classic economic evolution caused by a predictable boom-and-bust cycle, like those of the automotive and utility industries in the last century.

In the telephone company market, deregulation drove down margins at the same time that the Internet bubble forced carriers to build out excess capacity. As a result,

## Why Wall Street's got the carriers wrong

most service providers are overextended and cash-poor — prime targets for mergers and acquisitions.

After the dust settles, the telco market will consist of a few global giants that dominate the market for decades (think Detroit's Big Three auto manufacturers) and a handful of "boutique" players.

Given the rapid consolidation and industry churn, what's a network executive to do?

If you believe Wall Street, the answer would appear to be to take the safe route. Pick the largest telcos with the deepest pockets and greatest cash reserves, and sign long-term deals with them — they're the most likely survivors. Steer clear of radical upstarts with crazy technologies (they'll disappear eventually).

Here's the deal, and I'll say this as a humble techie who slept through economics class: Wall Street has got this one wrong. OK not 100% wrong, just incomplete.

Here's what the wizards of Wall Street are missing: Telco services, unlike cars or energy, change and evolve. Market forces will force this change to continue (even accelerate). And that evolution will prevent the service provider industry from settling into the sleepy stasis that Wall

**Here's what the wizards of Wall Street are missing: Telco services, unlike cars or energy, change and evolve.**

Street is predicting.

Think about it. Electric power hasn't changed appreciably since 1904. And cars still get you from Point A to Point B (just faster and more comfortably). But "telco services" now encompass e-mail, voice mail, broadband data, videoconferencing, and Internet access (not to mention wireless voice and data).

And as the pace of globalization increases and competition gets fiercer, the use of such services will be an increasingly valuable advantage for companies. Users will demand — and in a free market, will get — new services and devices, not just variations on the same old theme.

But from whom? Big companies are great

at standardization and economies of scale. What they're not so good at is innovation. Therefore, by definition, smaller companies will succeed in offering new services — disrupting the "classic" economic model of a handful of big, sleepy companies dominating the landscape.

The bottom line is if your company views technology as a competitive differentiator, you can't afford to take a totally safe route. Invest some of your telecom dollars in start-up companies offering truly innovative services. You may not be safe, but you won't be sorry.

*Johnson is senior vice president and CTO for Greenwich Technology Partners, a network consulting and engineering firm. She can be reached at johna@greenwichtech.com.*

### Free Newsletters

■ Keep up with the latest **TECHNOLOGY DEVELOPMENTS**. Get the free Technology Update newsletter via e-mail every week. Go to [www.nwfusion.com/focus](http://www.nwfusion.com/focus) and sign up!

[www.nwfusion.com](http://www.nwfusion.com)

## FIND HI-TECH BUSINESS PARTNERS NOW

**Partnerpoint** is a new Internet exchange helping professionals in telecommunications, information technology, e-business, media, and the Internet find business partners — around the world or next door.

On [www.partnerpoint.org](http://www.partnerpoint.org) find:

- ▶ Quality information about companies and executives looking for partnerships now
- ▶ Partnerships include:
  - Co-marketing
  - Distribution
  - Sales/Supplier
  - R&D
  - Joint Venture
  - Financing
- ▶ Tools to identify and target the kinds of companies you need
- ▶ Connections to a network of quality business organizations supporting your industry



**partnerpoint.org**

Your networking resource from the U.S. Chamber of Commerce



**Partnerpoint** is backed by the U.S. Chamber of Commerce and leading high-tech companies: CommWorks, Equinix, Genuity, International Data Group, KeyMind, Lucent Technologies, META Group, ServerVault, Siemens, Sun Microsystems, and Tisani.



# The Edge

■ SERVICE PROVIDER DEVELOPMENTS  
AT THE JUNCTURE BETWEEN THE ENTERPRISE  
AND THE NEW PUBLIC NETWORK

## Short Takes

■ **NetPlane Systems** said it is now shipping a "high-availability" implementation of the **Open Shortest Path First** routing protocol. The new OSPF code product is part of NetPlane's **OPTIRoute** IP routing software for carrier-class network equipment. Four OEMs have purchased the new release for equipment they are developing, ranging from core routers and cable modem termination systems, to next-generation optical switches, NetPlane says. OPTIRoute with high-availability OSPF is designed to work in centralized and distributed edge and core environments. It supports multiple levels of redundancy, synchronization between primary and back-up modes, virtual routing and Multi-protocol Label Switching/Generalized MPLS integration, NetPlane says. Pricing for OPTIRoute OSPF begins at \$80,000 with OSPF high-availability offered as a separate purchasable option. [www.netplane.com](http://www.netplane.com)

■ **Lucent** announced that **Ntera**, an Internet telephony service provider in Miami, will use Lucent's IP service nodes to deliver prepaid calling and least-cost routing to its worldwide customers. Ntera is the first customer to install in a global network Lucent's **EXS Converged Services Platform**, an IP-enhanced service node that supports the deployment of voice and data services in circuit, packet and converged networks.

Ntera's parent, Radiant Holdings, has deployed more than 100,000 ports of Lucent EXS systems — handling hundreds of millions of minutes of traffic per month — in Miami, and will be installing the systems throughout its worldwide network. Ntera plans to employ Converged Services Platform in a programmable server environment, and use it as a tandem switch and Signaling System 7 signaling and media gateway for its entire network. [www.lucent.com](http://www.lucent.com)

# Tracking traffic for trends

Avian Communications looks to generate more revenue for wireless operators.

■ BY TERRI GIMPELSON

MARLBOROUGH, MASS. — A start-up emerged from stealth mode last week with a product and suite of services designed to generate more revenue for wireless operators by tracking calls over the Internet.

Avian Communications is an 18-month-old Massachusetts company headed by Jules Meunier, former president of Nortel's wireless networks division and a 22-year veteran of the company.

Avian's product is designed to let operators increase average revenue per user for packet-based services by monitoring traffic and network usage. Avian also operates monitoring services for operators so they can bill content providers for network usage.

The device is called a mobile service switching point (MSSP). It sits in the path of a data stream, between the Internet and the mobile wireless data network's Gateway General Packet Radio Service Support Node, and records traffic trends by inspecting each packet in real-time for content.

When operators and content providers agree on which calls a content provider will pay the operator for — for example, toll-free numbers or URLs — the Avian MSSP is configured to recognize and flag those calls. MSSP attaches a timer to flagged traffic, which monitors activity.

The traffic is then inserted back into the data stream and forwarded to the Internet. Unflagged traffic passes through the MSSP box to the Internet.

Operators purchase and install MSSP and hire Avian as a traffic monitoring "middleman" between operators and content providers. One such monitoring service Avian offers is Packet 800 intelligent mobile service.

With Packet 800 service, MSSP inspects transactions made between an end user and a company such as an online florist. The MSSP box forwards the information to the network operator, which then reverse bills the online florist for network usage.

"We found out that companies prefer to do online business vs. phone business because it generates more revenue for them," Meunier says. "They've found it's easier to make sales if people can see the flowers they're buying and see all the different services the company has to offer. It makes for a much richer transaction."

Meunier says end users have shied away

from making these types of transactions from mobile devices because of uncertainty in pricing.

"This allows content providers to say they will be the ones to pay for the transactions instead of the end users, and it gives the operator the ability to inject themselves into the network and charge for such a

would not be able to monitor where calls originate and where they terminate.

"This opens the door to so many other types of services," Meunier says. "Operators can now think of different ways to bundle those services where today they can't even observe their data traffic."

But analysts note the company may not be unique. They will compete against other young wireless equipment companies, such as Watercove, Starent and Tahoe.

Another challenge for Avian is in marketing clarity, analysts say.

"It's very difficult for Avian to explain what this product does," says Becky Diercks, director of wireless research for Cahners In-Stat. "They must craft a clear message before attempting to sell into the market. They should also consider developing relationships with other infrastructure providers to help them sell this product."

"Carriers are just now beginning to roll out their 2.5G and 3G services," she says. "How quickly they adopt Avian's technology will depend on how quickly they deploy and begin to roll out these new services."

Once they do, Avian says it can insert MSSP into the network without changing the network or slowing the data stream. MSSP works in GSM, Code Division Multiple Access and Universal Mobile Telecommunications System networks.

The company announced Meunier's hiring last week. He left Nortel last October after a management shake-up that saw Frank Dunn replace John Roth as Nortel CEO, and several other executives reassigned following a company reorganization. Before being named president of Nortel's wireless networks division, Meunier replaced Bill Hawe as CTO in February 2001 following Hawe's abrupt departure after cashing in 602,000 stock options — worth \$18.4 million — three days before Nortel stock plummeted 33% on a quarterly warning ([www.nwfusion.com](http://www.nwfusion.com), Doc-Finder: 8035).

Meunier replaces interim Avian CEO, Raj Alur. Alur is a member of the company's board of directors and a principal at St. Paul Venture Capital, one of Avian's investors.

Avian did not disclose pricing for its products or services. The company says two carriers will begin trialing its product and services in March. Six others are under discussion.

Avian: [www.aviancommunications.com](http://www.aviancommunications.com)

## PROFILE: AVIAN

**Location:** Marlborough, Mass.

**Founded:** August 2000

**Product:** Mobile service switching point (MSSP).

**Founders:** Tom Hamilton, CTO; Jihad Boura, chief architect; John Ziegler, VP of software development.

**Financing:** \$22 million second round from St. Paul Venture Capital, Argo Global Capital, Nokia Venture Partners, Wasserstein Ventures and others.

**Employees:** 71

**Fun fact:** Avian traditionally initiates new employees at a weekly pizza lunch. New employees bring the beer and are rated by veteran employees on their selection.

thing," he says. "The consumer wins because he gets cheaper rates, content providers get more business and cheaper transaction costs, and operators get a different class of people to pay for their services."

Meunier says similar partnerships can be made with online airline ticket vendors. He says the typical telephone service costs vendors about \$50 to process vs. \$10 for an online sale.

Other MSSP-based services Avian plans to offer are:

- PacketPrime 900 intelligent mobile service, which lets the operator bill a user for a service from a third party, such as 900-number services.

- Packet Mobile Virtual Network Operator, which lets a "virtual" operator — one without any network assets — discriminate between services and bill accordingly.

- Packet VPN, which lets operators customize packet services for VPN customers.

Avian says that with MSSP technology and Avian services, wireless operators

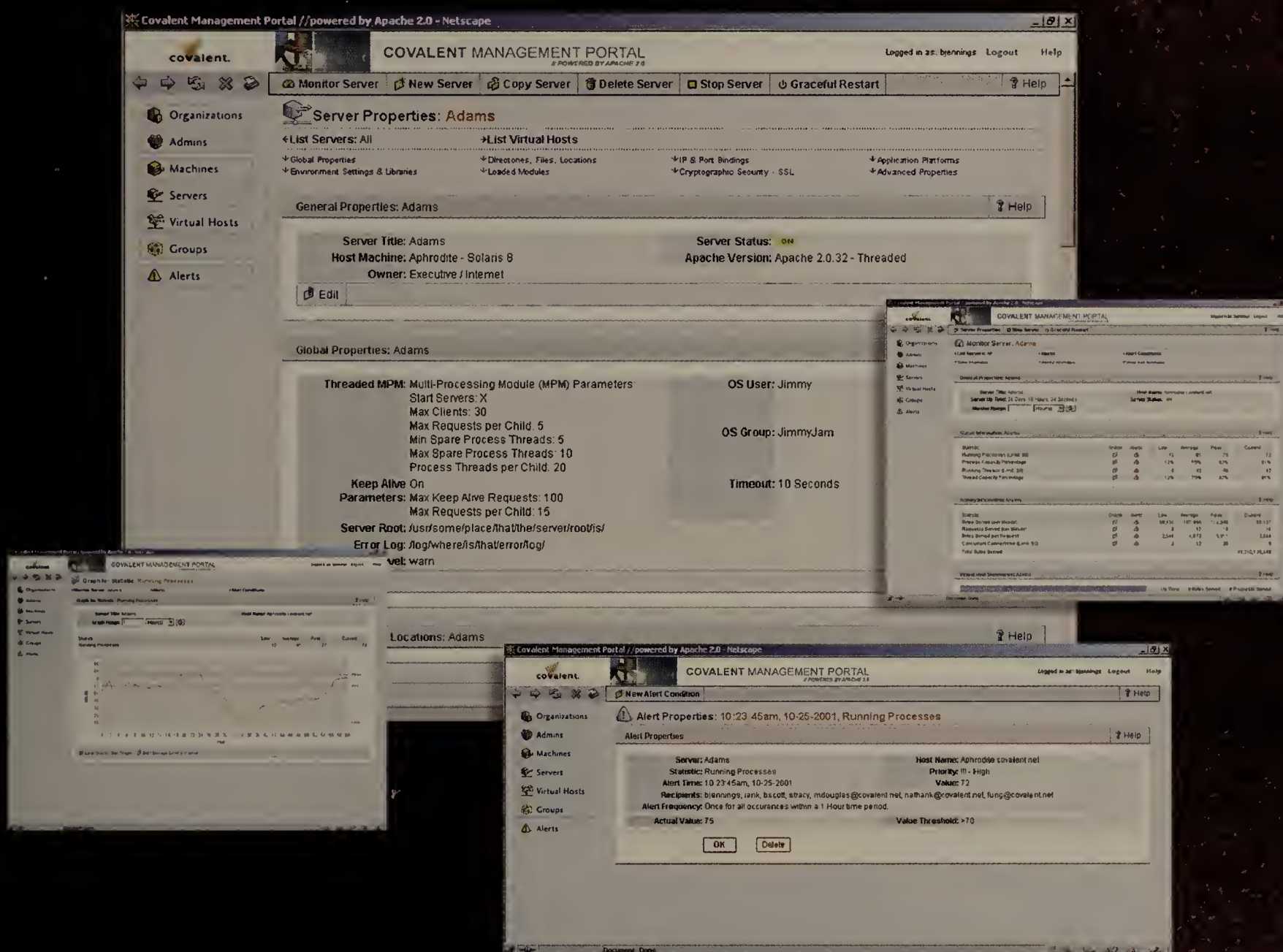


**FINALLY**  
**THE ONE THING**  
**APACHE**  
**HAS BEEN MISSING**  
**ALL ALONG**



# COVALENT ENTERPRISE READY SERVER POWERED BY APACHE 2.0

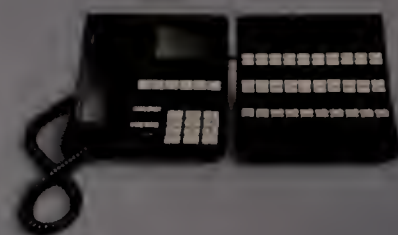
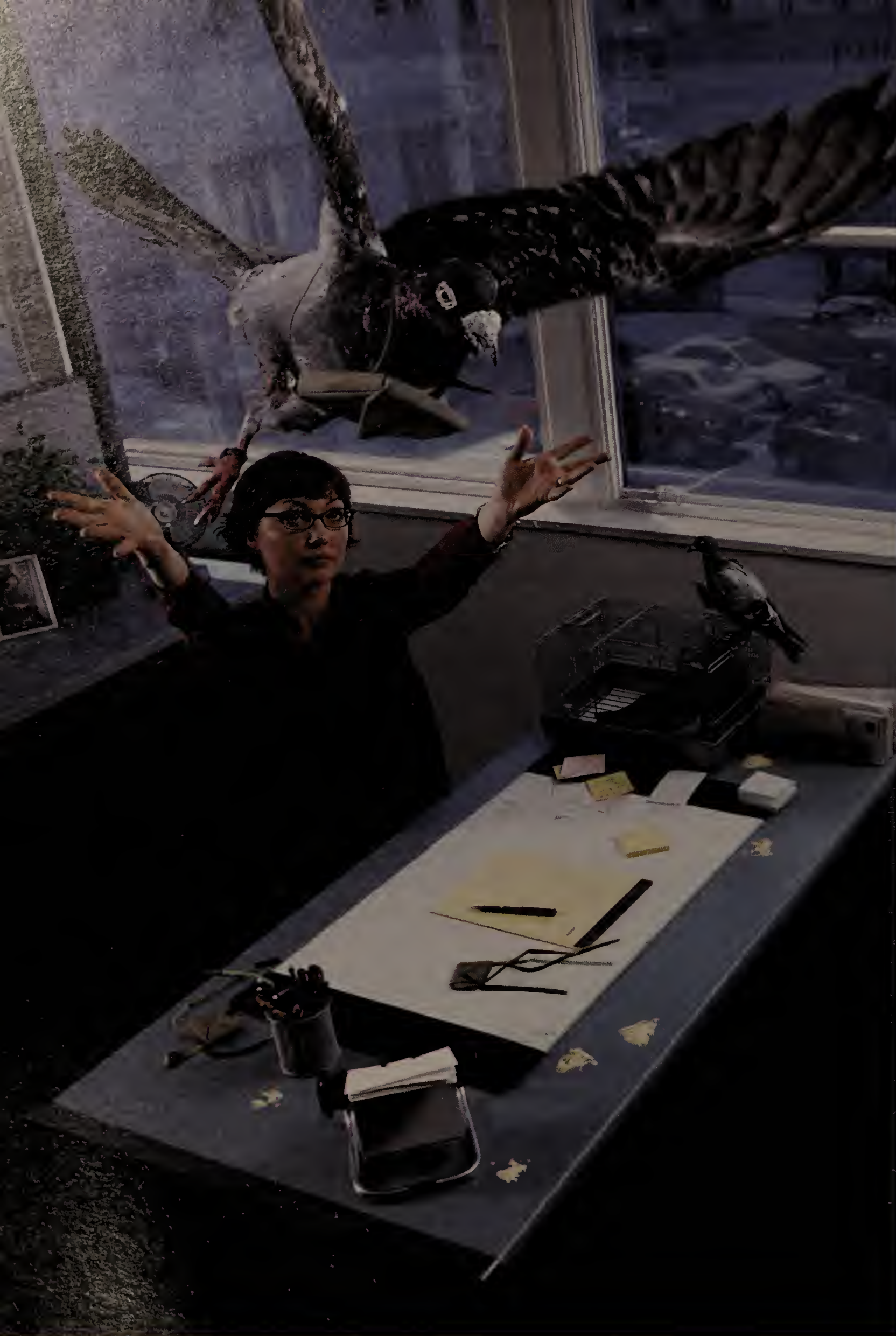
- Centralized browser-based management of hundreds of servers
- Enterprise grade Web server security
- Reduced total cost of ownership



  
covalent™

**FREE** Find out what's new in  
Apache 2.0. Sign up for our  
free Web seminar at  
[www.covalent.net/apache20](http://www.covalent.net/apache20)  
or call us at 800/444-1935  
for more information on  
Enterprise Ready Server.

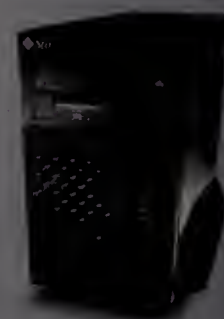




Telephone systems



Portable PC



Servers



Networking gear

Everybody needs something. And the odds are you can find a good deal on that something at eBay. With millions of items listed every week, we've got just about every networking and IT product you could want, new or used. So before you go spending weeks searching for a bargain, you might want to check us out first. Go to [ebay.com](http://ebay.com) or AOL keyword: ebay and register where you see this:



**ebay**



# Technology update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

## Intelligent route control improves BGP

■ BY JEREMY JOHNSON

Internet capacity has increased significantly in the past two years, but the explosive growth in Internet traffic has been accompanied by bottlenecks, especially in the "middle mile" of Internet-based networks.

These bottlenecks originate from a variety of sources and cause application performance to degrade even to the point of service failure.

Intelligent route control promises to let companies control Internet routing while reducing network costs, effectively eliminating middle-mile congestion.

To combat problems that can occur within a particular service provider's network, corporations increasingly are using multiple service providers to obtain failover and proximity to end-user browsers. While this "multihoming" approach avoids reliance on a single carrier, it also introduces considerable management complexity.

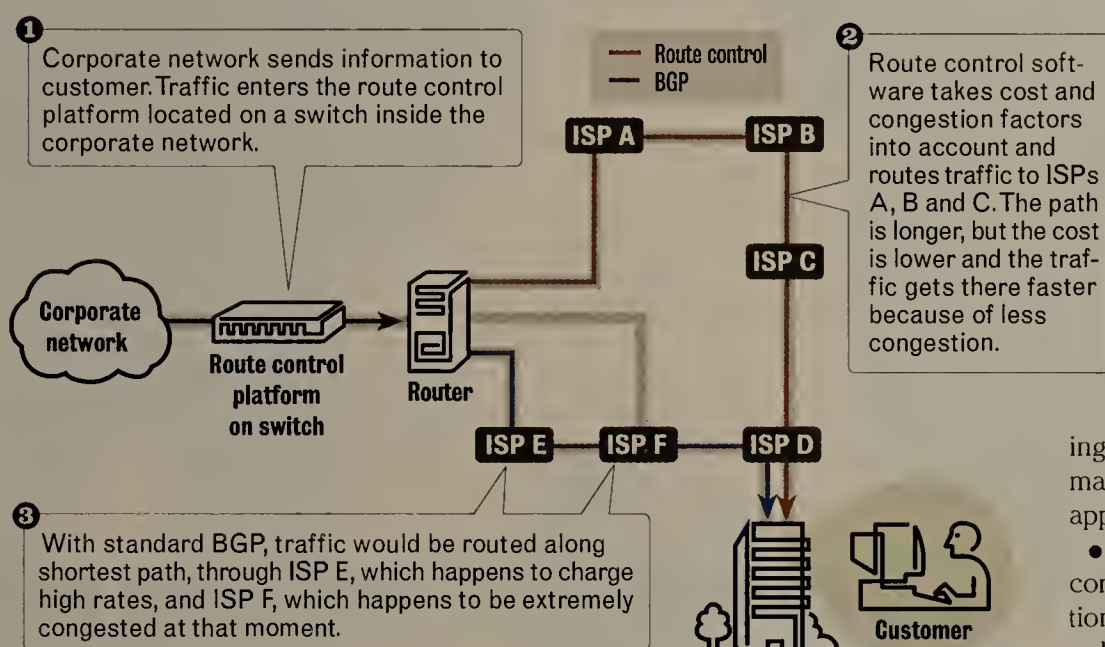
The only tool available to manage routing information has been Border Gateway Protocol (BGP). BGP lets different networks advertise "reachability" information to one another for specific prefixes, and this information is distributed to routers across the Internet so each router knows which prefixes are reachable through the networks to which it is connected.

To reap the redundancy benefits inherent in multihoming and minimize the complexities of using BGP, intelligent route control products continuously monitor performance at thousands of individual destination prefixes across multiple paths — regardless of the application — and optimize routing to these prefixes. These products also let organizations establish route opti-

### ■ HOW IT WORKS

### Intelligent route control

Intelligent route control software selects the most cost-effective path for Internet traffic, as opposed to Border Gateway Protocol (BGP), which selects the shortest path.



mization policies that take into account application performance parameters and bandwidth usage/cost constraints.

Intelligent route control products typically perform three functions: calibration, navigation and representation or reporting.

The calibration function continuously monitors traffic flows to identify destination networks applications are sending traffic to, and uses active and/or passive monitoring techniques to measure traffic performance to these destination networks and measure traffic performance to these networks across each ISP. The performance statistics are forwarded to the navigation function used in making route optimization

decisions.

The navigation function uses statistics gathered during calibration to determine whether the user-defined performance (in terms of packet loss and latency) and transit cost policies are being met and makes route changes in near real time in accordance with these policies.

If it detects that performance to a specific destination over a low-cost provider has exceeded that destination's policy threshold, it examines alternate ISP links to find the least-cost path that meets both loss and latency performance requirements. The navigation function then redirects traffic over the new path, by issuing a standard

BGP route update to customer routers. Route changes are forwarded to the representation function for historical reporting.

The representation function uses the statistics and routing change logs gathered during calibration and navigation to provide reports on bandwidth usage/cost, traffic delivery performance and route change activity. This function also is used to provide access to user management and configuration functions.

Companies that use intelligent route control experience three key benefits:

- **Quality of service:** Intelligent route control continuously monitors and routes traffic over high-performing paths, enabling predictable performance consistent with business-specific application requirements.

- **Cost management:** Intelligent route control allows definition and implementation of customer-defined bandwidth usage policies, which enables more cost-effective use of existing bandwidth. In addition, it provides corporations with complete visibility into traffic performance and usage on all service providers, giving them the data they need to perform ongoing provider selection and contract negotiation.

- **Control:** Intelligent route control gives network engineers the tools to implement routing policies that match business and application performance and cost objectives to Internet infrastructure usage. Furthermore, it provides information needed to proactively manage ongoing service-level agreements with providers.

Johnson is chief architect at netVmg. He can be reached at [jeremy@netvmg.com](mailto:jeremy@netvmg.com).

## Ask Dr. Internet

By Steve Blass

**Our remote site with an Internet connection is protected by a SonicWall Pro device. The users at the remote site cannot access the Secure Socket Layer-protected Outlook Web Access (OWA) page from behind the device. They can access normal Web pages and other SSL-protected sites just fine. We've disabled all the rules on the SonicWall to no effect. Also, the device is implementing network address translation, not one-to-one.**

It does not sound like the SonicWall device is the problem because your remote users can use other SSL-protected Web sites without problems. Permission settings seem to be the most common OWA problems. Make sure you grant "access this computer from the network" and "log on locally" permissions to the user accounts using OWA from the remote site. The Web server account needs these rights too. Then verify that the Web server is configured to

allow anonymous logon using basic authentication. Your remote users need to run their browsers with JavaScript and cookies enabled. You can find Outlook Web Access troubleshooting help at [www.nwfusion.com](http://www.nwfusion.com), DocFinders: 8036, 8037, 8038 and 8039.

Blass is a network architect at Change@Work in Houston. He can be reached at [dr.internet@changeatwork.com](mailto:dr.internet@changeatwork.com).



GEARHEAD  
INSIDE THE  
NETWORK  
MACHINEMark  
Gibbs

## Spring cleaning

seemed to have made the transition to the new system. I think there was a mention someplace that the best results occur transferring between PCs with the same operating system and application versions.

"I then tried the product again on two PCs running the same operating system. This time the transfer went smoothly and everything seems to have been transferred successfully. In my opinion the product works well only where the source and target machines run the same operating system (at least where Windows 2000 is concerned)."

Butler included the log of the "interesting behavior," and a miserable read it was! PCsync's migration feature does a more practical job, but we'd really like to see a tool that could monitor installation of an application, determine which files and registry settings belonged to it and then let us handle the entire installation as an object so we could move it on and off our systems as a single . . . er, well, "thing." We think we may have found such a tool and when it is released, we promise that you will be the first people we tell.

Regarding the shorterlink.com service we talked about in "Pringles, satellites and shortening" (DocFinder: 8046), the

site's author, Hubert Seiwert, wrote: "I saw your article mentioning my site, shorterlink.com. I have now made it check if a URL has already been added so it won't give out more than one ID per URL. You are right that there's a very simple script underlying the service, it's just two HTML pages (totaling 3K) with embedded Perl code. It seems to work OK, though..."

Finally, a note from Phillip Remaker regarding "Copping a spam" (DocFinder: 8047): "I love SpamCop. I am a paying member. I do not get responses but that is because abuse desks are overwhelmed. But I do get amateur spammers shut down, [such as the] ones that use the Geocities site, and I get their commissions canceled (Nextcard spams) and I get the professionals blacklisted (like pronto-mail/commtouch)."

"I still get spam, but using tools like the Realtime Blackhole List (www.mail-abuse.org), an ISP can stop a lot of spam before it gets to your mailbox. Those blacklists benefit from the experience developed by SpamCop. I used to manually report spam using abuse.net addresses (see www.abuse.net) but spammers are better and better at obscuring data, and SpamCop stays on top of it and roots out the real data, making reporting easy.

"I have also personally helped a number of people close third-party open relays (poorly administered machines exploited by spammers to hide their identities) using techniques at www.mail-abuse.org/tsi. I'd like to see more ISPs (especially big ISPs such as AOL, Netzero, Juno) allow personalized antispam filtering at the server side similar to the AWESOME system at www.ev1.net (everyone's Internet) where you can choose the blacklists of your inbound mail.

"Finally, I get a lot of 'chain letter' MLMs asking for money to be sent to real U.S. mail addresses. These constitute criminal mail fraud, and may be reported to the Postal Service at (DocFinder: 8048). Not sure if the Postal Service really deals with that, but I try. Haven't heard from it.

"Side note: Have you seen the new features from credit card companies (notably Discover) that allow you to generate merchant-specific credit card numbers? Discover calls it Deskshop, and it is pretty awesome, since if your card number is stolen from an Internet merchant, it is not useful at any other merchant!"

*Thanks to the hundreds of readers who have written in since the New Year. If you haven't, it is about time! Your thoughts to gearhead@gibbs.*

## Cool Tools Products that have graced the Cool Tools lab . . .

A roundup of the  
latest neat stuff  
By Keith ShawNEC MultiSync LCD 1550V flat-panel  
monitor

The NEC MultiSync LCD 1550V 15-inch flat-panel monitor has freed some space on my desk. However, following the axiom that "nature abhors a vacuum," papers, press kits, business cards and stacks of CD-ROMs now occupy the space where the bulkier monitor once sat.

Still, the flat-panel monitor wins style points for its ability to make my co-workers jealous, and it was very easy to set up. The monitor can swivel vertically to help reduce glare, and the picture quality is good, if not better, than my older monitor. At \$350 to \$400, the price may be low enough to warrant getting them for staff members who need an extra monitor on

their desk. Just make sure they don't put more junk in the space created. Go to [www.necmitsubishi.com](http://www.necmitsubishi.com) for details.

Contour Design's  
RollerMouse station

Because the Cool Tools lab is so close to my regular desk, the position of the mouse for the test computer is in an awkward place, causing me to stretch my arm farther than I should. So I was happy to get Contour Design's RollerMouse station, an ergonomic tray/device that sits under the keyboard. The RollerMouse is a roller bar with several buttons and a scroll wheel located just under the space bar of your keyboard, along with two gel pads for wrist support/comfort.

Used correctly, you can type with your fingers and mouse with your thumbs on the roller bar. The roller bar also lets you double-click by pushing down on the bar or by double-clicking on one of the buttons. There's also an additional PS/2 port on the device so you can plug in your old mouse in case you

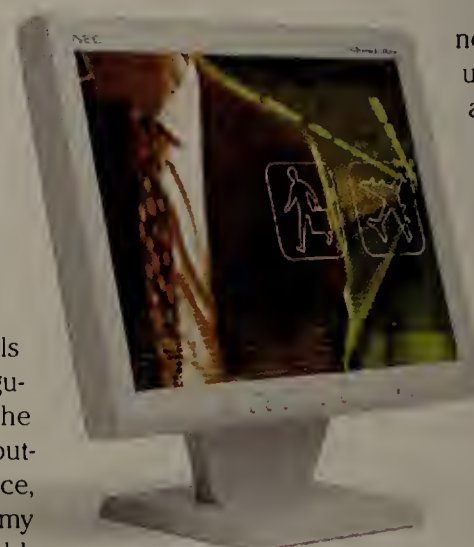
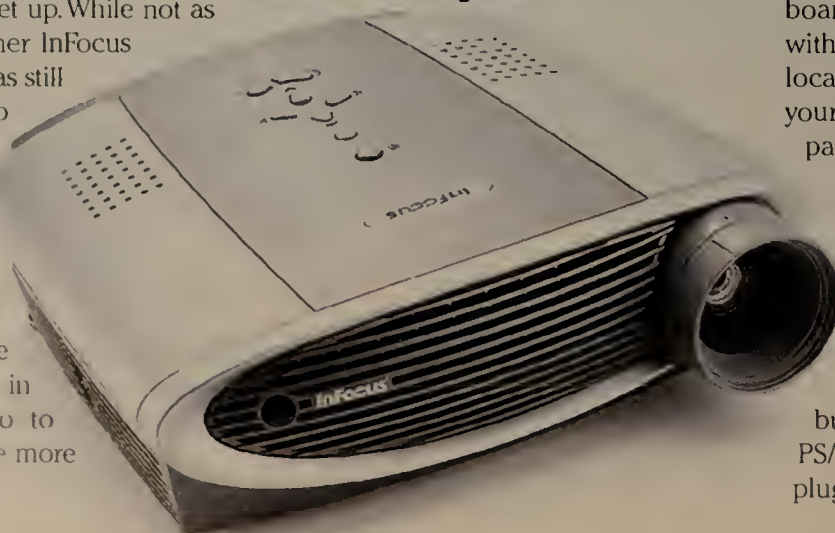
need it for traditional use. Using the roller bar as a mouse takes some practice, but after a while becomes very comfortable. The \$190 price tag is a bit steep, but it may be worth it for end users with ergonomic issues related to their use of a traditional mouse. Go to [www.contourdesign.com](http://www.contourdesign.com) to check out the product.

*When not cleaning his cubicle, Shaw is senior reviews editor at Network World. Send Cool Tools items to [kshaw@nww.com](mailto:kshaw@nww.com).*

The InFocus LP-530 was a good small projector  
for our traveling needs.

## InFocus' LP-530 projector

Finally, the lab tested the InFocus LP-530 projector, a portable projector for our PowerPoint presentations that was extremely mobile and easy to set up. While not as lightweight as some other InFocus projectors, the LP-530 was still small enough for us to transport, and smaller than the big brick that we usually use. At \$6,000, it's still a bit pricey, but like the monitors, projectors have decreased in price (and size) considerably in the past few years. Go to [www.infocus.com](http://www.infocus.com) to see more projectors.



The NEC MultiSync LCD 1550V is affordable enough to grace our desktops.



Contour Design's RollerMouse station gave us a new way of navigating.



DB2 software

40,879.95 ipmC, \$19.35/ipmC, availability date 12/7/00. Oracle 389,434 ipmC, \$21.24 ipmC, 0/WIPS, availability date 6/8/01. Oracle: none posted. Linux TPC-H 100GB results: DB2 2,733 1 TPC TPC-C, TPC-W and TPC-H are trademarks of the Transaction Processing Performance Council (www.tpc.org). IBM, the e-business logo, and a registered trademark of International Business Machines Corporation in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds. UNIX is a registered trademark of AT&T Intellectual Property in the United States and other countries. Windows is a registered trademark of Microsoft Corporation. Service names may be trademarks or service marks of others. © 2002 IBM Corporation. All rights reserved.

ed on TPC-C, TPC-W, and TPC-H benchmarks. Results are available at [www.tpc.org](http://www.tpc.org). UNIX: TPC-W 10,000 ipmC, \$9.47 ipmC, availability date 10/31/01. Oracle: none posted. IBM, the e-business logo, and a registered trademark of International Business Machines Corporation in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds. UNIX is a registered trademark of AT&T Intellectual Property in the United States and other countries. Windows is a registered trademark of Microsoft Corporation. Service names may be trademarks or service marks of others. © 2002 IBM Corporation. All rights reserved.

IBM

THE CODERNAUTS WERE ON A SEARCH FOR A DATABASE THAT RUNS ON LINUX®, UNIX® AND WINDOWS® 2000. THEY DISCOVERED:

# DB2 OUTPERFORMS ORACLE

CUSTOMERS KNOW IT, PARTNERS KNOW IT, BENCHMARKS PROVE IT

@ business software [ibm.com/db2/outperform](http://ibm.com/db2/outperform)

IT'S A DIFFERENT KIND OF WORLD.  
YOU NEED A DIFFERENT KIND OF SOFTWARE.





EDITORIAL

John Dix

## Don't miss the VON VoIP Showdown

**E**omNet was quieter than usual but we still managed to get 400-plus people to *Network World's* VPN Showdown, hosted by Editorial Director John Gallant. And now we're gearing up for our next presidential-style debate.

The theme this time: "Is IP telephony ready for prime time?" And the venue is the Spring 2002 Voice on the Net (VON) show, which runs April 8-11 in the Washington State Convention and Trade Center in Seattle.

This VON conference — the 17th — is "focusing on the businesses, technologies and issues facing the VON industry today," with an emphasis on the interests of carriers and enterprise users.

We will zero in on the enterprise side of that equation, exploring the questions that swirl around the decision of when, where and if convergence makes sense.

I'll be joined on stage by Robert Smithers, president of Miercom, a testing firm that has put the industry's leading products through their paces as a member of Network World's Global Test Alliance.

And we hereby challenge these vendors to show up to participate: Cisco, Nortel, Avaya, Alcatel and Shoreline Communications. The first four are obvious choices because they're big-time players in the enterprise convergence business, but why Shoreline? We wanted a scrappy, smaller player with interesting technology — a distributed call control and voice applications architecture — to stir the pot.

We need to hear back from these vendors — who's in, who's out — by March 18.

Like all of our Showdowns, we'll divide the time roughly into thirds. In the first segment Smithers and I will target questions at specific vendors, then we'll give the vendors time to question each other (always enlightening), and finally we'll throw it open to questions from the audience.

These are some of the questions we're eager to have answered:

- Can you deliver all the telephony features your customers want without deviating from today's standards?
- If you offer traditional PBXs and voice-over-IP alternatives, when do you suggest one over the other and why?
- Can IP telephony products match the reliability and quality of traditional PBXs?

So, put VON on your calendar for April 8-11 in Seattle and, in particular, make sure you come to lunch that Tuesday in the general session room for this enterprise voice-over-IP Showdown. It should make for a good dessert.

— John Dix  
Editor in chief  
jdix@nww.com

### Jumbo Frames

While I applaud Kevin Tolly's advocacy of Jumbo Frames ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8023), I think it is unfair and overly simplistic to dismiss certain technical issues as a "smokescreen."

In a homogeneous 10G Ethernet network, Jumbo Frames may make sense. But there are nontrivial issues regarding multitenant unit (MTU) discovery and fragmentation management that will accompany any move to Jumbo Frames if you expect to interoperate with legacy networks.

The good news is that storage-area networks might be a crucible for Jumbo Frame implementations and perhaps serve as test beds for the best way to handle the issues around end-to-end MTU management and fragmentation reduction.

I don't think Tolly is doing any good by dismissing valid concerns of the 802.3 committee as political. He would be better off wielding his influence to get the storage vendors to work in concert to drive the committee to a solution that allows Jumbo Frame negotiation at the media access control layer.

Phil Remaker  
San Jose, Calif.

### Not a threat

Regarding "Threat to 'Net'" ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8024): I have difficulty believing that multimedia instant messaging will cause the Internet to grind to a halt. Yes, I can "imagine the after-school surge" in activity, but that stress test happened with Napster. Which is bigger: a 3M-byte video file or a 3M-byte audio file? Answer: They're the same. Data is basically data, no matter the payload.

We hear that broadband hasn't reached its potential, and the majority of people use dial-up to access

E-mail letters to [jdix@nww.com](mailto:jdix@nww.com) or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

# opinions!

the 'Net. Are these the people that will wait for hours while they send audio and video files?

This level of data transfer is already happening over the Internet. Teens and nonteens move MP3 files, multiplayer game chatter, video, streaming media and so forth. Unless a lot of people start running 1.5M bytes or greater to their houses, the 'Net will do just fine.

Ed Marczak  
CIO  
Creative Content Artists  
New York

### Outlawing spam

Regarding Scott Bradner's column "Fantasy lawmaking" ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8025): Bradner is so bugged by spam that he's suspended what I consider one of the sanest, most intelligent perspectives out there. A little reflection will convince him that legislation is unnecessary and ineffective.

One possible solution to the spam problem is to have every router a packet flows through append the router's ID and the port the packet came in on before sending the packet on its way. This would make every packet traceable to its source or to a noncompliant router. ISPs operating the latter would simply find themselves nonoperable after a time.

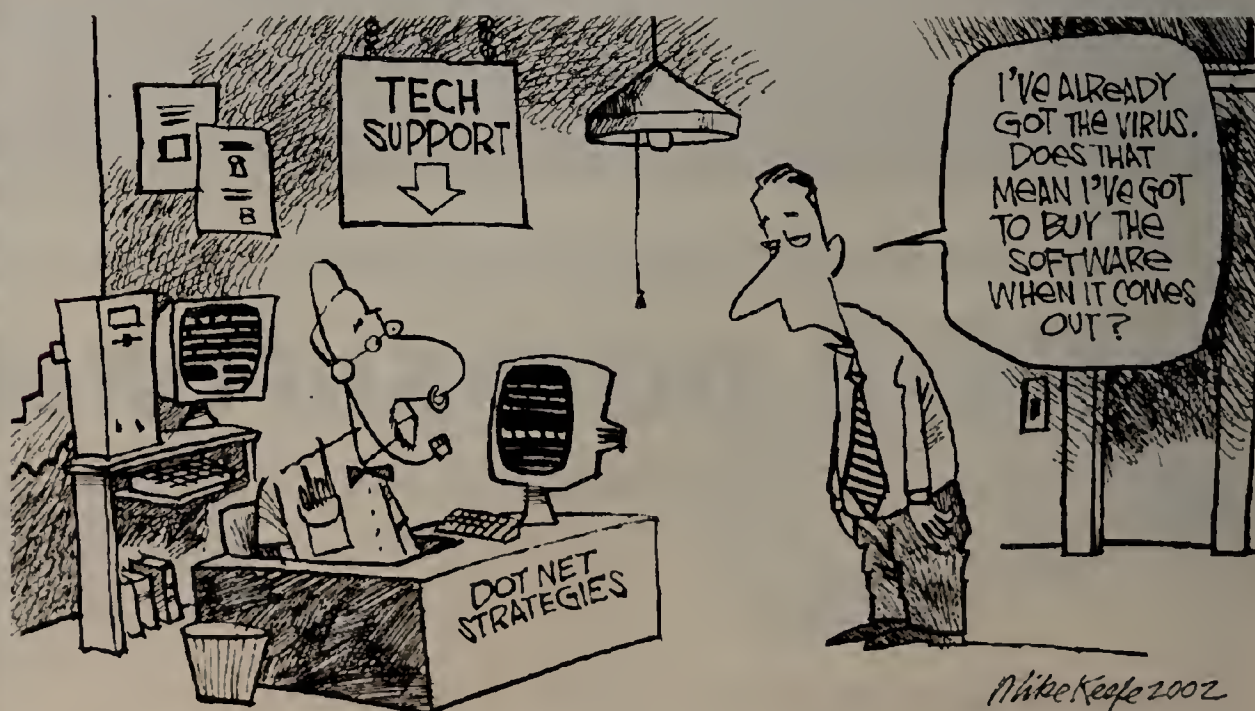
I don't think the extra bytes involved would tax things too much, and the benefit of packet traceability would have numerous other uses.

Walt Pawley  
Roseburg, Ore.

*Bradner replies: What is wrong with insisting that people sending you mail stop doing so when you tell them to stop? And making packets traceable either to their source or to a noncompliant router is mostly meaningless in this context — a lot of mail comes from free accounts at Hotmail and Yahoo or are bounced through unsuspecting third parties.*



**More online!** [www.nwfusion.com](http://www.nwfusion.com) Find out what readers are saying about these and other topics. **DocFinder: 8021**





**BOTTOM LINE**

Joel Snyder

**M**any companies are much more dependent on the Internet than they've ever been. With e-mail, Web-based commerce and VPNs becoming a larger part of most businesses, the Internet is no longer optional.

This means you need to start treating the Internet as if it were part of your network and not some foreign land outside the firewall. For best results, focus on three areas: reliability, management and reporting.

Reliability is the same old story: Are you ready for a disaster? Do you have a back-up plan? This has been hashed out so many times in recent weeks that we don't need to go over it again, except to emphasize that you need a plan for those times when your Internet line goes down or your ISP goes belly-up.

Management means knowing how the Internet is behaving today. Your best tools are the old standbys, ping and traceroute, plus NSLOOKUP for DNS maintenance. Get good versions for your own desktop and learn how to use them.

Ping generally is useful only on a LAN because so many administrators block Internet Control Message Protocol echo packets. Traceroute is really the tool of choice. There are lots of good traceroute tools out there and a bunch of lousy tools. Beware of a traceroute that promises things that are impossible, such as geomapping of the Internet. I use Nanog Traceroute, which I believe is the best. You can get a list of good

## Integrating the 'Net into net mgmt.

traceroute implementations at [www.traceroute.org](http://www.traceroute.org).

Figure out all those obscure traceroute options, such as Loose Source and Record Route (LSRR), which are vital for viewing paths in both directions. Now that symmetric routing is a thing of the past, you need to know a lot more about the topology of the Internet to solve problems. If your ISP blocks LSRR packets, as some naive ISPs do, find a new ISP that understands how to operate a backbone. You should also find an Internet-located traceroute server, which can give you a third point of view. (Traceroute.org is a good place to start, or you can use the one I run at [www.opus1.com/www/traceroute.html](http://www.opus1.com/www/traceroute.html).)

Reporting means knowing how well the Internet is behaving. Get a reporting tool and use it to track Internet uptime, latency and throughput. I use the outstanding freeware Multi-Router Traffic Grapher ([www.mrtg.org](http://www.mrtg.org)) for bandwidth statistics and Ipswitch's WhatsUp for uptime and latency, but there are lots of options if you don't like either of those.

What is our Internet uptime? What do we do if our main link goes down? How much bandwidth are we using? What is the latency to our most important sites? And how do the packets get there and back? If you can answer those five questions, you'll have properly integrated the Internet into your network management.

*Snyder, a Network World Test Alliance partner, is a senior partner at Opus One in Tucson, Ariz. He can be reached at [Joel.Snyder@opus1.com](mailto:Joel.Snyder@opus1.com).*

**You need to start treating the Internet as if it were part of your network and not some foreign land outside the firewall.**

**INDUSTRY COMMENTARY**

Frank Dzubeck

**T**en years ago, IBM was a company riding on its reputation for providing legacy computers and communications to enterprise IT users. But Big Blue was late to the game with minicomputers, fumbled the transition to client/server computing, missed

the ascendance of IP as a communications interoperability protocol and had invested billions of dollars in research and development, PC microprocessor technology and operating systems with minimal product market share. The past caught up to IBM in the form of declining revenue, earnings and stock price.

Until the arrival of Lou Gerstner in 1993 as CEO, IBM's organizational and product changes were calculated, slow and methodical. Gerstner brought to IBM a new way of conducting business that accelerated change at the expense of the intrinsic IBM icons of corporate culture, geographical principalities and personnel ego. If results are an indicator of success, IBM has been reinvented, revitalized and wildly successful over the past decade.

Gerstner's tenure at IBM can be best described by the phrase "In like a lion, out like a lamb." As an industry outsider, Gerstner first had to get an education in the state of IBM's businesses, assets, personnel and — most importantly — customer and investment banker opinions as to what was wrong or right within the company. Next, he had to identify which key executives had the technology and skills required to adapt to his way of conducting business. Simultaneously, Gerstner brought in key lieutenants to become his "appendages" in the company's day-to-day operation. The next task was to consolidate assets, reduce personnel and expenses, and identify key technologies and/or operations that could be turned into productive revenue-generating vehicles.

The results were dramatic. IBM corporate strategy was refocused on the customer rather than products and technology. Layers of management were trimmed from the organization chart. Decisions were removed from committees and placed in the hands of executives responsible for the divisional balance sheets. Advertising created a new, younger image for the corporation across the globe. Key growth areas

## Assessing the Gerstner era

such as software and services were targeted for investment. Emphasis was placed on new business areas, such as Open Standards, the Internet, e-business, Java, Linux, voice-enablement software and wireless computing. Pension, medical and other personnel benefit plans were reengineered to save money. Salaries and stock options were more equitably distributed. Lastly, the decision was made to reinvest excess cash in company stock on a significant and continual basis rather than to grow via mergers and acquisitions.

All this action occurred in Gerstner's first five years at IBM. The next five years produced little change. Investment analysts began to compare IBM stock growth with that of a bond rather than a typical stock.

IBM is radically different today than in 1993. The concept of quarterly stock buy-back has driven the stock price up 800% over the past decade. The company has shifted away from hardware and software to services (40% of current revenue). Because of this shift, IBM has more employees than in 1993 but less overhead. Big Blue is no longer in the communications systems business but in the communications component business. IBM is still the worldwide leader in patent grants, but now the patent portfolio produces revenue through licenses and products.

Unequivocally, Lou Gerstner has left his imprint on IBM. But that imprint is not a vision for the future. The past five years of riskless status quo can't be a realistic vision of the future for a technology company.

When Gerstner steps down next month, Sam Palmisano will take over as CEO. Palmisano's business acumen, coupled with his mentor Denny Welsh's leadership talents, let IBM grow from an upstart player in the services industry to the dominant force, producing \$40 billion in revenue. That growth orientation, coupled with Palmisano's years of experience in risk management, indicate investment growth may be IBM's new mantra rather than management of earnings per share. Whatever the case, the future of IBM will be based on a sound financial and organizational business footing prepared by Gerstner.

*Dzubeck is president of Communications Network Architects, an industry analysis firm in Washington, D.C. He can be reached at [fdzubeck@commnetarch.com](mailto:fdzubeck@commnetarch.com).*

**Until the arrival of Gerstner, IBM's organizational and product changes were calculated, slow and methodical.**



# No time



■ BY EVAN ROSEN

Donald Western, a vice president at Caterpillar, manages global teams from his office in Peoria, where two video screens are mounted on the wall.

Large companies with project teams spread over several countries and multiple time zones are increasingly turning to videoconferencing to connect geographically dispersed groups.

Companies are realizing that flying employees from one location to the next not only chucks up travel costs, but also decreases productivity and leads to team exhaustion. Of course, videoconferencing isn't a complete replacement for face-to-face meetings. Companies that are leading the way in videoconferencing report that periodic in-person visits are still necessary, and they caution that videoconferencing is most effective if team members already have an existing relationship.

But the trend toward IP-based videoconferencing equipment, rather than ISDN-based units, and the spread of IP networks is clearly making it easier than ever for companies to roll out videoconferencing.

Dow Chemical is leading the charge. Dow has hired Electronic Data Systems (EDS) to build a global network, dubbed DowNet, that will deliver video, voice and data over a single, largely IP-based network. The core infrastructure is primarily fiber-optic cable, carrying mostly IP traffic, although there will be some ATM. And end users can receive bandwidth on demand over VPN links. EDS is supporting the network from operations

centers globally, and Cisco is providing the infrastructure.

"It's an aggressive undertaking," says Christopher Duncan, who is leading the DowNet project. A key application that the network will support is videoconferencing. Dow is deploying 300 PC-based PictureTel group videoconferencing and collaboration systems, a move that will triple the number of units currently installed. The systems run at 384K bit/sec and let teams simultaneously collaborate on applications, data and whiteboards via Microsoft NetMeeting software.

By March, Dow will convert one-third of its conference

rooms globally into what it calls iRooms, which house the videoconferencing systems.

Dow is also deploying 200 Polycom ViaVideo personal videoconferencing systems at desktops globally, twice as many as the company planned to deploy before Sept.

11. Dow is putting some personal systems, which run at 128K bit/sec, in managers' homes so they can communicate in the evening with team members in other parts of the world.

"Roles are becoming more global. Our scope is becoming larger and larger,"



# for face time

**Global companies  
build IP-based  
videoconferencing  
networks to link  
project teams.**

Duncan says. "There is no way you can go out of the office and see face-to-face everyone you are responsible to. That includes customers, direct reports and your boss."

## **Wireless video on the factory floor**

The distance leadership tentacles at Dow also extend to the factory floor in its automotive plastic parts business. The company has blended videoconferencing systems with wireless technology at plants in suburban Detroit and Grand Rapids, Mich., so a manager 100 miles away or team members in Switzerland or the Netherlands can view prototype parts as they come off the line.

The system also lets Dow get immediate customer feedback. "We have avoided the cost of travel. We have also solved our customers' problems instantly, which allows our customers to solve their customers' problems," says Daniel Denardo, Dow's manager of global videoconferencing.

The increased efficiency of using a single global IP network and the flexibility of PC-based videoconferencing are letting Dow integrate streaming video with videoconferencing. This will let home users with limited bandwidth connections join videoconferences, even though the video will be one-way. "At least they can watch and participate through instant text messaging," Duncan says.

Where there is a business need, Dow will pay for broadband connections for home users. Rather than contracting with a service provider, Dow is letting each employee select the technology and provider. Dow is also integrating DowNet with its global satellite system, using videoconferencing as a downlink. When Dow CEO Michael Parker delivers his quarterly "State of the Company" speeches to Dow's 50,000 employees, many employees will watch the satellite address through videoconferencing systems.

While Dow's global IP network is perhaps the most state-of-the-art among global companies, many other corporations are chalking up impressive productivity gains by encouraging

## **Tools for global teams**

- **Videoconferencing:** This tool lets people see each other as they talk. A point-to-point videoconference connects two locations, while a multipoint videoconference links three or more sites. Most legacy videoconference systems run over ISDN and comply with H.320 international standards, but newer systems support IP connections and support the H.323 international standards for videoconferencing over packet-switched networks.

- **Data collaboration:** This includes application sharing, whiteboarding, instant-text messaging and file transfer. These collaboration tools turn a videoconference into a full-featured video meeting. A graphical presentation or whiteboard may fill most of the screen with two small video windows displaying the faces of the videoconference participants. Some users skip the video and use teleconferencing with data collaboration tools.

- **Video mail:** This is a video message delivered as an e-mail attachment. Video mail is useful when time zone barriers render real-time interactions impractical. The video message may show a prototype, an animated product design, or the face of a manager describing a problem or delivering kudos.

- **Streaming video:** This is a video clip stored on a server and sent in compressed form over a network such as the Internet. Users can then view the clip through a Web browser. A videoconference can be taped, stored for reference, and made available via streaming to those who missed the real-time video meeting. Many companies use streaming video to deliver CEO speeches to the troops.



teams to communicate and collaborate as if they were in one location. Critical success factors in leading and participating in global teams include establishing a face-to-face relationship before holding video meetings and encouraging spontaneous, rather than scheduled, interactions.

### Walking the virtual hallway

Parker Hannifin is using a "virtual hallway" concept in its Compumotor division to link a design and engineering group in Milford, Ohio, with a factory automation group in Rohnert Park, Calif.

If an employee walks into Conference Room 14 in the California office, it almost feels like the Ohio office. Parker Hannifin accomplishes a degree of telepresence, or the feeling of being at the other location, by leaving videoconferencing systems on regardless of whether a video meeting is scheduled. Both locations have PictureTel 680 systems and dedicated T-1 connections with 384K bit/sec allocated to the virtual hallway. "You can see the secretaries in Ohio crossing the hall," says Bud Parer, the division's California-based IS manager. "The accounting person in Ohio can see us and wave." Parker Hannifin's Compumotor division supplies motors and controllers that do everything from filling ketchup bottles in factories to spraying water through the fountains at the Bellagio Hotel in Las Vegas. The division began using videoconferencing to manage a merger with a partner that is now its human-machine interface group in Ohio. Both teams have worked at a distance while integrating financial systems, tech support, repair process management and quality control. "In some cases, we were implementing network security while we were on videoconferencing. I'd say to my counterpart, I'll meet



## Poster child for distance leadership

Mike Kollath leads a 10-person group that runs Dow's Web site. The group is based at Dow headquarters in Midland, Mich. However, Kollath works from an office near Zurich, Switzerland. "I've become a poster child, for better or worse, for leading geographically dispersed teams," he says.

While Kollath grew up in Midland and worked from headquarters for several years, he prefers to live in Switzerland because his fiancé is there. Because Europe has lagged behind North America in implementing e-business, Dow wants Kollath to concentrate his efforts on Europe.

For Kollath, videoconferencing and data collaboration fill the gaps between trips to Midland every two months. He chalks up five hours per week of videoconferencing, using video to meet with his team and to address new Dow employees. Kollath notes that distance collaboration is ingrained in Dow's corporate culture, and that his team members are anything but strangers. "Fundamental in managing a team from this distance is that I knew and had worked with all of these people before assuming this job," Kollath says. "So I'm just building on existing relationships."

you in the [virtual hallway] in 3 minutes," says Parer, who at times has spent up to five hours a day in video meetings. The frenzy of merger management sparked the spontaneous interactions that are now commonplace at Parker Hannifin.

### Caterpillar: Videoconferences on the fly

Caterpillar, a \$20 billion per year manufacturer of industrial and farm equipment, encourages global teams to master communication and collaboration tools. The company has deployed more than 300 PictureTel 970 group systems and has deployed so many personal systems that it has lost track of the number. Caterpillar uses a gateway that lets teams using ISDN connections communicate and collaborate with others connected via IP.

While managers schedule 1,400 hours of video meetings per month, many more video interactions happen on the fly. "We knew we needed the ability to communicate ad hoc with anybody anywhere," says Gus Otto, Caterpillar's new technology design engineer. "We make decisions quickly by involving team members. Six minds are better than one. While other companies are making plans, we're interacting."

Donald Western, a Caterpillar vice president, runs the company's large engine and fuel systems division. He manages teams around the globe from his office at Caterpillar headquarters in Peoria, Ill. On his office wall hangs a 60-inch plasma screen that displays teams at six global sites. "I can call a [general manager] at the spur of the moment if we have a current issue that we have to talk about now. It's just like picking up the phone," Western says. "We are a global company, yet we are a very close company."

Those who practice distance management insist that it is essential to press the flesh with team members before establishing a video relationship, and that periodic face-to-face meetings are critical. "You've got to have a personal relationship with senior managers in each location," Western says. "The only way you get that is through the investment of time and energy. You have to do that on the ground. You can't let videoconferencing do that for you."

*Rosen speaks on distance leadership and broadband topics. He is chief strategist of Impact Video Communication in San Francisco and can be reached at [erosen@impactvid.com](mailto:erosen@impactvid.com).*

## Challenges remain

**1. Reading body language** Donald Western of Caterpillar places a premium on making eye contact and reading body language, because he says a team member's words say one thing, but the body language says something very different. And usually the body language is more accurate.

**2. Culture clashes** Distance meeting tools may be available, but their use is by no means automatic. "It's tough to convince high-level managers who are used to flying to different locations to use videoconferencing," says Bud Parer of Parker Hannifin. "When they come back and say that videoconferencing is not as good as being there, I agree with them. But they agree with me that it's better than a phone call."

### 3. Creating common objectives

Perhaps the biggest challenge is to ensure common objectives. Western puts it this way: "When you are dispersed around the world, the whole team has to be on the same page." To this end, some companies are flattening hierarchies so that information can flow unimpeded up and down the chain of command.

Crossmark, which outsources services including marketing and merchandising to consumer package companies, is shifting its corporate culture to open information flow. More than 18 months ago, CEO O.R. Smith began encouraging Crossmark's 10,000 employees to e-mail him about any major issue. In turn, other executives opened the e-mail floodgates, and the company can now resolve issues faster.

Besides e-mail, Crossmark is encouraging greater use of video meetings. The company currently uses videoconferencing from four domestic sites, but is adding at least a dozen Tandberg group systems by May. Crossmark, of Plano, Texas, currently uses line speeds of 384K to 768K bit/sec over ISDN primary rate interface, but is transitioning to IP-based videoconferencing.

William Norris, president of Crossmark's sales and marketing division, says, "The biggest challenge is to ensure that our focus, priorities, direction and culture are well understood."

## Distance dollars: The cost of linking teams

What is the return on investment of uniting geographically dispersed teams? The value of faster decision making and more effective problem resolution can be many times the dollars spent on technology. If teams use communication and collaboration technologies effectively, these tools and the networks that support them can save companies millions of dollars.

When Parker Hannifin considered deploying videoconferencing, the company conducted no formal cost analysis, because "the pay out was so obvious," according to Parker Hannifin's California IS manager Bud Parer. "It was back of the envelope. There are going to be lots of airplane flights. With a couple of flights, we can pay for the systems."

A major cost for many companies is video transport charges. However, using part of a dedicated connection blurs the cost of transporting video. Parker Hannifin pays \$2,400 per month for two T-1s that support a variety of data, including video.

While Caterpillar uses ISDN and pays for each minute of use, the company keeps transport costs in check by using a modest 128K bit/sec as its default videoconferencing line speed. "Why do you need to do high-bandwidth calls if you can get sufficient business quality at 128 [K bit/sec]?" insists Gus Otto of Caterpillar. "You don't need 384 [K bit/sec]."

The Dow approach of deploying video, voice and data over a single global IP network could ultimately deliver the greatest return on investment. While Dow refuses to provide dollar figures on the infrastructure costs, the company believes that it is creating the ultimate team-uniting mechanism.



**"We are a global company, yet we are a very close company."**

—Donald Western, Caterpillar, vice president



# Strategies

■ CAREER DEVELOPMENT  
■ PROJECT MANAGEMENT  
■ BUSINESS JUSTIFICATION

## Slim down, shape up

Putting your network on a simplification diet can pay off.

■ BY BONNY GEORGIA

Maintaining a high level of service on a flat or reduced budget is a challenge facing many IT executives. Simplifying your network can slash support and maintenance costs and free up hidden dollars for your department, says Jim Metzler, vice president of IT consulting firm Ashton, Metzler & Associates.

If something isn't adding value to your network, perhaps it's time to remove it. However, some targets of simplification are more obvious than others.

C5 Editorial, a sound postproduction company in New York, was drowning in physical hard drives until supervising sound editor and network administrator Lew Goldstein took the plunge and built a storage-area network (SAN) to house the company's massive sound-effects library.

"For every feature film, we typically have five or six people working on the soundtrack. Although they're doing different parts of the film, there's information that needs to be common between them," Goldstein says. Rather than share the same files, sound engineers relied on hundreds of hard drives that were carried between desktops as needed.

After doing some research, Goldstein built a SAN using Gadzoox Capellix switches combined with ATTO Technologies' ExpressPCI Fibre Channel host bus adapters and AccelWare drive-management software. At the heart of the system are two racks with 16 Seagate 73-gigabyte Fibre Channel drives. The system cost around \$25,000 but returned immediate dividends in improved file sharing and flexibility.

"Right now, we have about three terabytes worth of storage shared among 27 users editing feature films, including 'Men in Black II' and an animated film called 'Ice Age.' The SAN has eliminated a tremendous amount of redundancy, and drastically changed every way we're working," he says. The system is also simple to administer.

When defense contractor Northrop Grumman wanted to streamline printing and copying, Dave Licher, manager of sector print services in Hawthorne, Calif., counted more than 40 contracts for 2,500 copiers, printers and fax machines. Sidelining the stand-alone machines and leasing a fleet of 900 high-speed multifunction Xerox Document Centres slashed the need for IT printer support by 90%, thanks in large part to a Web-based printer administration center.

"The real beauty of this system is Web-based self help. Users can print to any printer in the country that is linked to the network Web site. That same Web site also has FAQs and how-to [information] that show people how to map their own drivers with step-by-step instructions, something they were totally dependent on IT for before," Licher says.

Having one lease that includes consumables and maintenance saves thousands in administrative and purchase order costs, and the flexibility to run high-speed, high-vol-

ume print jobs from any desktop let the company close several copy centers. "We now maintain just one copy center per site for color jobs and other things we must closely control," Licher says. Northrop Grumman has realized a seven-figure return on investment (ROI) so far, more than double Licher's estimate for the project.

Steve Shim, director of IT services at Health First in Brevard County, Fla., oversees a network of 40 healthcare clinics and three major hospitals spanning a 400-mile area. Of particular concern to Shim was Health First's telecom infrastructure, a chaotic mix of equipment from multiple vendors.

There were outdated key set systems, many of which didn't support voice mail, five-digit dialing between locations or other advanced features. The mix of equipment and voice mail systems meant multiple maintenance contracts as well," Shim says.

Health First invested a little less than \$2 million to roll out a Siemens HiPath telecom system. The organization deployed Siemens HiPath switches in the hospitals and headquarters.

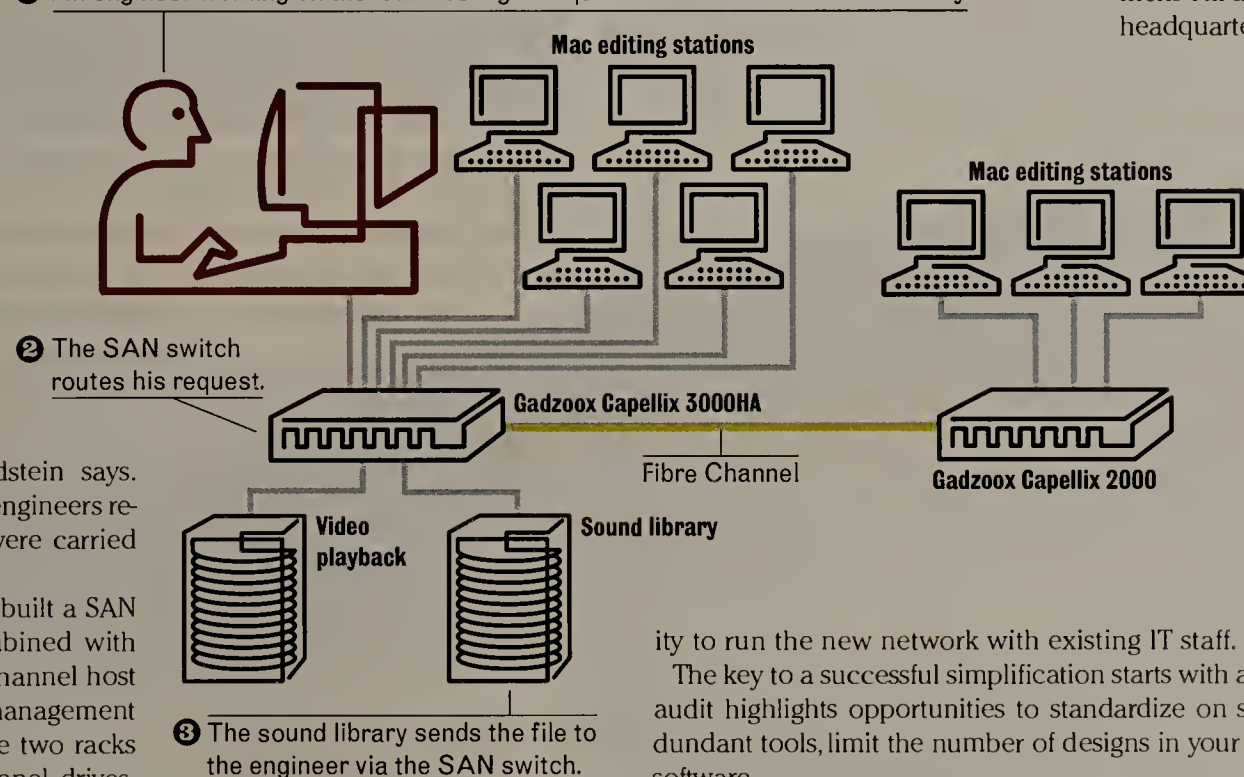
Replacing outdated key systems and phones with Siemens remote shelf technology at outside locations lowered maintenance costs and eliminated the need for outside service contracts. Remote clinics now enjoy the same calling services that the main hospitals have.

Bill Benton, telecom manager for Health First, says ROI for the project will be achieved sooner than planned, thanks to streamlined maintenance and the abil-

### SAN streamlines sound editing

Sound postproduction company C5 Editorial rolled out a storage-area network to host the firm's massive sound-effects library. Here's how engineers use it:

① An engineer working on the film "Ice Age" requests a file from the sound library.



ity to run the new network with existing IT staff.

The key to a successful simplification starts with a thorough audit, Metzler says. An audit highlights opportunities to standardize on specific vendors, consolidate redundant tools, limit the number of designs in your network, and reduce versions of software.

However, audits are no easy task, especially in a large enterprise or decentralized environment. If your IT team has been lax in record keeping or recent acquisitions have made cataloging installations difficult, appointing an action team can help. Licher of Northrop Grumman asked the manager responsible for each copier contract to get together with the IT person for the site. "Each team member was asked to gather data on how many printers, copiers and faxes were located there, and report back," he says.

Once you've identified key inefficiencies, be prepared to demonstrate how they affect the IT budget. "For example, if the whole company wants PCs, but a department is determined to keep their Macs, it translates into added maintenance and support dollars," Metzler says.

Lastly, find out who is using the technology, what they're using it for, and research the effect that the proposed simplification will have on them before any cuts are made. "You don't want to announce you'll no longer support Macs and discover that means you've cut off payroll," Metzler says.

Georgia is a freelance writer in Hudson, Mass. She can be reached at [bonny@worldwork.net](mailto:bonny@worldwork.net).



**CTDI****Universal Edge 600 IAD Series**

# ***Delivering Flexible & Seamless Integrated Access Solutions***

## **Enabling Integrated Services**

To deliver next-generation voice and data services, quickly and seamlessly, you need superior network agility. The Universal Edge 600 series from CTDI provides all the agility you need with powerful, future ready capabilities and features that make it easy to install, operate and upgrade.

The Universal Edge 600 portfolio of Broadband Integrated Access Devices delivers next-generation voice and data services over a packet infrastructure. The Universal Edge 600 series provides business-class solutions for data, including high-speed Internet access, LAN inter-working, frame relay, cell relay, and video transport. In addition, the Universal Edge 600 provides the ultimate flexibility for delivering voice services. The Universal Edge 600 is ideal for small, medium, and large businesses, offering solutions that support from 12 to 24 analog phones to multiple DS1s/E1s of voice.

## **Flexible Network Connectivity**

Universal Edge 600 offers network connectivity options from 1.5 to 155 Mbps. For DS1/E1, service-selectable ports can be software defined for UNI, Inverse Multiplexing over ATM (IMA), or Circuit Emulation Services (CES). This unique feature allows the network connection to expand from a cost-effective DS1/E1 to a maximum of 4 DS1s/E1s without a forklift upgrade. DS3/E3 and optical interfaces eliminate the access bottleneck, extending high-speed services to the customer premises. OC-3c/STM-1 optical interfaces include multimode, single mode-intermediate reach, and single mode-long reach optics.

## **The ATM Advantage**

Universal Edge 600 delivers Quality of Service (QoS) benefits inherent to ATM. Different traffic types require different classes of service: voice traffic, for example, requires more predictable delivery and higher priority than data. These QoS requirements are met through traffic shaping and the assignment of traffic to different ATM virtual circuits (VCs). Traffic shaping based on the Generic Cell Rate Algorithm is designed to ensure a smooth flow of traffic in each of the service categories: Constant Bit Rate, Variable Bit Rate-real time, and Variable Bit Rate-non real time. Transmit queuing is done on a per-VC basis.

By providing differentiation on a per-VC basis, the QoS is guaranteed end-to-end across the network.



***"For flexibility and ease of operation with the advanced voice and data services that businesses demand, the Universal Edge 600 portfolio of Broadband Integrated Access Devices is unsurpassed"***

Call today for more information **800.458.0398** or browse our on-line inventory @ **[www.CTDI.com](http://www.CTDI.com)**



## EQUINOX PCI Multi-modem Adapters

With a price per port and performance that can't be beat, Equinox PCI Multi-modem Adapters deliver flexible and cost-effective dial-access connectivity.

### Compare for yourself!

Equinox PCI Multi-modem Adapters provide a **44% to 36%** savings over the leading competitors of similar products.

Our PCI Multi-modem Adapters are available in 4 and 8-port models and are scalable to 32 ports per server.

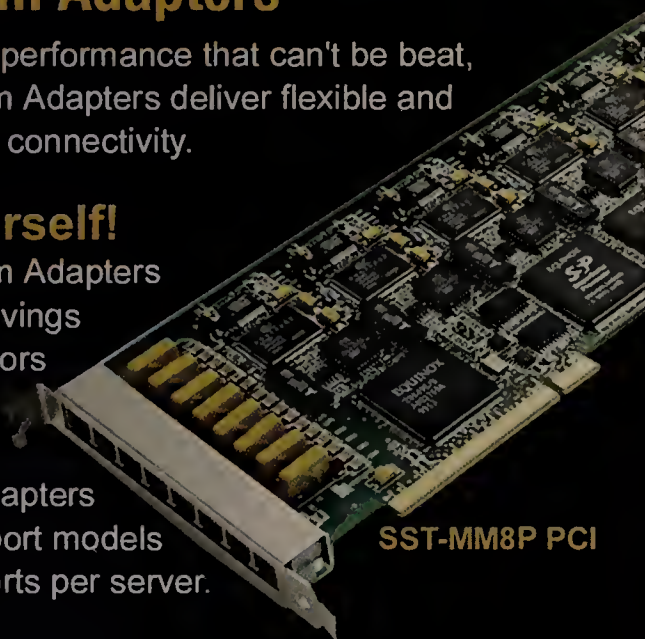
Equinox Multi-modem Adapters install in minutes and require no interrupts. They are compatible with most popular operating systems and are easily deployed, highly manageable and available at a price/performance point that is truly unmatched.

### Try before you buy!

Call Today! 800-275-3500, ext. 615  
or +1-954-746-9000, ext. 399  
for your **FREE 30-day** evaluation.  
Email: [sales@equinox.com](mailto:sales@equinox.com)

[www.equinox.com](http://www.equinox.com)

**EQUINOX**<sup>®</sup>  
an Avocent Company



SST-MM8P PCI

## What else do you want?

The Cyclades-TS Series gives me convenient and secure access to servers and network equipment, whether I'm on site or on the road. It packs up to 48 ports on 1U and a combination of features that is not offered by any other product on the market today. The Cyclades-TS is the **COMPLETE** console access server.



**NEW!**



• Single port device server

Looking for better, more effective training content?

# FOUND IT!

## LearnKey Self-Paced Training

LearnKey features more than 950 self-paced courses for the most popular business application software and the most current network, certification, developer and soft-skill training. As a company dedicated to learning for 15-years, we recognize what you are looking for and we've developed the tools you need to find success — whatever your job may be.

Superior  
Content

Effective  
Delivery Systems

Valuable  
Study Tools

Proven  
Results



on our **NEW**  
Network+ Training!  
Use code #4048 when ordering\*

Available Online from **NetSmart** [www.netsmart.com](http://www.netsmart.com)



Learn From  
The Experts™

Microsoft® • CompTIA® • Novell® • Cisco® • Lotus® • Adobe® • Linux • CIW®

1.800.865.0165 • [learnkey.com](http://learnkey.com)

Limited time offer, some restrictions.

© 2002 LearnKey, Inc. LK015802

Source Code # 4048

- 1/4/8/16/32/48 RS-232 ports on 1U of rack space
- First Linux-based Terminal Server in the market
- IP Filtering, RADIUS, and Secure Shell (SSHv2)
- Linux, FreeBSD, Sun, HP, and IBM compatible
- No unintentional breaks (Sun)
- Off-line data buffering

**LINUX  
INSIDE**



THE LEADER IN  
LINUX  
CONNECTIVITY

[www.cyclades.com](http://www.cyclades.com)  
1.888.CYCLADES 1.888.292.5233  
510.770.9727  
[sales@cyclades.com](mailto:sales@cyclades.com)  
Fremont, CA

**CYCLADES**





CONTROL IT  
SECURE IT  
MANAGE IT  
FROM ANYWHERE

## Server Access Over IP

Moves Remote Server Management to a Higher Level

The UltraLink is the Rose Electronics answer to Modem and Ethernet remote access! Server access over IP technology allows you to access, control and provide computer maintenance from anywhere in the world. When combined with Rose KVM switch technology, server management administrators can have faster access saving time and money.

With dial-in, dial-back security and high-resolution quad screen and SSL encryption, the UltraLink raises the KVM industry bar in remote server access.

A KVM industry pioneer, Rose Electronics is recognized for superior KVM switch technology. Product integrity, simplicity, and reliability are the hallmarks of all Rose products.

Call Rose to learn more about remote server management today.

Rose Electronics  
10707 Standliff Rd.  
Houston, Texas 77099  
281-933-7673

800-333-9343

WWW.ROSE.COM

USA . CANADA . ENGLAND . FRANCE . GERMANY . BENELUX . AUSTRALIA . SINGAPORE



BUY  
UPTIME  
.COM

www.buyuptime.com

## BuyUptime.com

Your One-Stop Shop for high availability products

### Network Cables

### Cisco and Fiber Cabling

### Printer, Modem VGA Cables and Adapters

### Enclosures

### Enclosure Accessories

### Power Adapters

### Cooling Solutions

### Laptop Accessories

### Racks

### Rack Accessories

### Power Distribution Devices

### Security Hardware

### Surge Protectors

### UPS Cables and Accessories

### UPS Management Peripherals

### UPS Management Software

### UPS Replacement Batteries

### UPS

### High Availability Made Easy

By understanding the ever-changing dynamics of information technology, BuyUptime.com is dedicated to providing the highest quality data protection and security products on the market today. Our goal is to deliver comprehensive solutions to protect your most valuable network assets while providing peace of mind.

At BuyUptime we stand behind the products we sell with customer service unparalleled by any other on-line resource. Join us today and let BuyUptime.com be your one-stop shop for high availability solutions!

Register to receive  
a High Availability  
Catalog!



### Cable Solutions

Cable and connectivity solutions for laptop, desktop and server applications

- Custom and standard cable assemblies including Fiber Optic, Category 5, Video, Fibre Channel, SCSI, LAN Parallel and Serial
- USB and IEEE-1394 FireWire Solutions including cables, hubs, converters and switches

starting at \$4

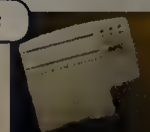


### Telephony Solutions

Uninterrupted powering solutions for cable telephony, FTTH, VoDSL and WLL

- Supplies continuous power (-48VDC or 12VDC) to locally power CPE equipment
- Provides up to 14 hours of battery back-up
- Features intelligent communication for proactive monitoring and maintenance information (on-line/on battery, missing battery, replace battery)

starting at \$72



### Server Protection

Performance power protection for servers and networks

- Protects your data by supplying network-grade battery back-up
- Robust diagnostics allow network administrators to solve problems before they happen
- Increases emergency runtime by allowing expansion

starting at \$259



### Power Distribution

For mission-critical networking and internetworking equipment

- Thorough selection of power strips, back-plates and remote reboot devices
- Manage via Web, SNMP or Telnet session
- Advanced power control units allow load-shedding, to increase system uptime
- 15A, 20A, 30A loads

starting at \$89



<http://www.buyuptime.com/promo> Key Code e148y

CALL: 888-288-8843 • FAX: 877-411-2080



**FREE**  
Content Filtering  
Subscription  
Valid Until 02-28-2002

# RoBoX Firewall

Global Technology Associates, developers of firewall products since 1994, proudly expands the GNAT Box firewall system offerings with the RoBoX, a desktop appliance for remote and branch offices at an affordable price.

- 10,000 concurrent connections
- Stateful packet inspection
- Three 10/100 NICs with DMZ
- IPSec VPN with mobile user support
- DNS and DHCP services
- Dynamic & Static NAT
- Broadband ready - PPPoE support

Powered by  
ICSA certified GNAT Box System

Sales: (800) 775-4GTA  
Tel: (407) 380-0220  
Email: info@gta.com  
Web: http://www.gta.com



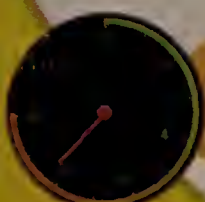
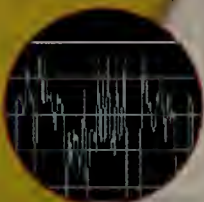
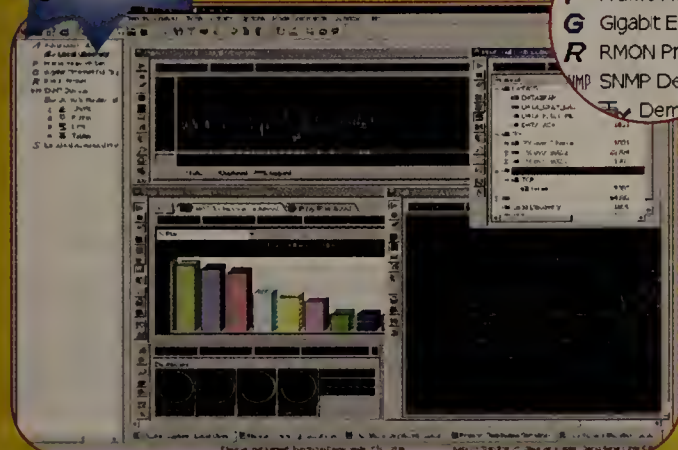
*"Big Security in a Small Box"*

**Global Technology Associates, Inc.**  
Firewall developers since 1994



**Quickly Pinpoint,  
Pre-solve and Prevent  
Network Problems**

**Windows XP  
Compatible**



## There Is A Better Way To Troubleshoot & Manage Your Network—Observer®

**Observer**—Identifies network trouble spots and costs thousands less than expensive hardware-based analyzers.

- **Full packet capture and decode** for over 500 protocols, including TCP/IP (v4 & v6), NetBIOS/NetBEUI, VoIP, SNA, SQL, IPX/SPX, Appletalk and many, many more!

- **Switched mode sees all ports** on a switch gathering statistics from an entire switch or capture/statistics from any port(s)

- **Long-term network trending** collects statistical data for days, weeks, months, even years

- **Real-time statistics** include Top Talkers, Bandwidth, Protocol Statistics, and Efficiency History

- **Ethernet (10/100/1000), Token Ring, FDDI**

- **Windows 98/Me/NT/2000/XP compatible**

- **Over 4,000 frame types recognized**

**Expert Observer**—Includes all of the features of Observer plus real-time and post-capture expert event identification and analysis—new SQL and Frame Relay experts add to the many other protocols covered, time synchronization technology, and modeling of network traffic.

**Observer Suite**—Provides a full complement of tools that includes all of the features of Expert Observer plus SNMP management, RMON console/Probe and Web reporting. Includes one remote Probe.

*If you have any network problems, find out the cause with Observer, Expert Observer, or Observer Suite.*



**Observer**  
\$995

**Expert  
Observer**  
\$2895

**Observer  
Suite**  
\$3995

Call 800-526-7919 or visit us online for a full-featured evaluation:  
**www.networkinstruments.com**

US (952) 932-9899 • Fax (952) 932-9545 • UK & Europe +44 (0) 1959 569880 • Fax +44 (0) 1959 569881

© 2001 Network Instruments, LLC. Observer, "Network Instruments" and the "N with a dot" logo are registered trademarks of Network Instruments, LLC. All other trademarks are property of their respective owners.



# CISCO

Authorized Reseller

Buy Sell Lease Repair

New Refurbished Used

- Routers
- Switches
- Hubs
- Nortel
- Memory
- ISDN
- DSU/CSUs
- 3Com

1 877 231 2451

## WORLD DATA PRODUCTS

[www.wdpi.com](http://www.wdpi.com)

Email: [cisco6@wdpi.com](mailto:cisco6@wdpi.com)



Sentry : PowerTower

## How do you reboot 16 equipment units...

## using Zero U of rack space?

**Sentry POWER TOWER** : Your Zero U Reboot Solution



16 remotely addressable power outlets — The highest density available of any Remote Power Management vertical strip. 30-amp power input feed distributed across 16 outlets.

Mounts vertically in your equipment rack or cabinet and requires Zero U of rack space.



Load Sense provides real-time current monitoring in the remote screen interface and through a built-in LED display for on-site measurement.

Power-up sequencing of all 16 outlets prevents an in-rush current overload.

Telnet, SNMP, Modem or RS-232 Interfaces for easy, practical and secure power management of remote internetworking equipment.



Install the new Sentry Power Tower in your data center, NOC or co-lo facility and gain the advantage of remotely rebooting up to 16 of your equipment units — without occupying any space in your rack or enclosed cabinet.

Try the New Sentry Power Tower in your rack or cabinet and realize the benefits of Intelligent Power Distribution and Remote Power Management.

See our complete product line at [www.servertech.com](http://www.servertech.com) or call 800.835.1515 or 775.284.2000

Another great product from  
**Server Technology, Inc.**

© 2001 Server Technology, Inc. Sentry is a trademark of Server Technology, Inc.

## Remote Network Management Solutions

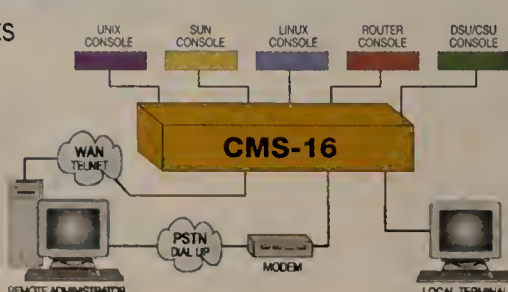
### Access Your Network Equipment from Anywhere

#### Telnet and Dial-Up Console/AUX Port Switch Cost Effective Terminal Server Alternative

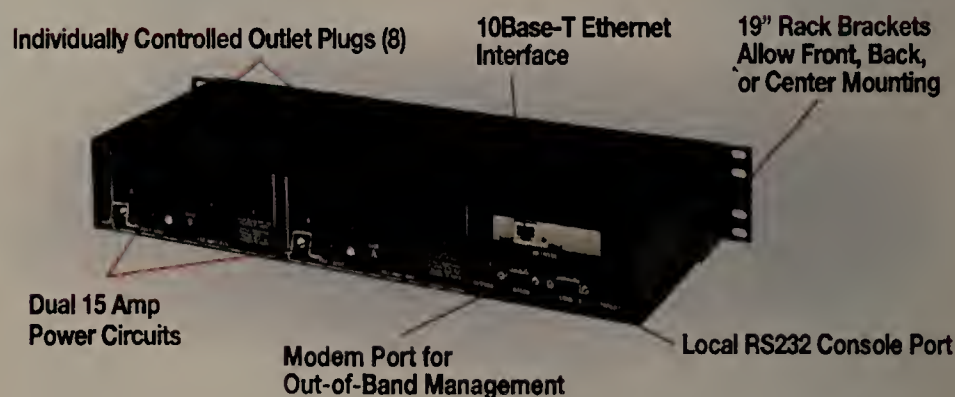


#### Console Management Switch (CMS)

- 8, 16 or 32 RS232 DB-9 Serial Ports
- Simultaneous Telnet Sessions
- Non-Connect Port Buffering - 32K
- IP Security Features
- Modem Auto-Setup Command Strings (User Definable)
- NEBS 3 Approved



#### Telnet and Dial-Up Network Power Switch Reboot Locked-up Equipment



#### Network Power Switch (NPS)

- 8 Individual Outlets
- On/Off/Reboot Switching
- Integral 10Base-T Interface
- Co-Location Features
- Outlet-Specific Password Security
- Network Security Features
- 115-VAC (230-VAC available)
- Power-Up Sequencing



western telematic incorporated  
5 Sterling • Irvine • California • 92618-2517

[www.wti.com](http://www.wti.com)

(800) 854-7226

Keeping the Net...Working!







Panex is an IT boutique headquartered in Houston, Texas specializing in providing intelligent technological solutions in everything from Data Warehousing/BI to dynamic E-commerce solutions to global technology. Panex currently has openings for the following:

**Business Database Analysts.** Coordinate business intelligence requirements of client users and conduct implementation of datawarehouse projects using design methodology, datawarehouse modeling techniques, relational database systems, including ERP and other backend systems, online analytical processing and SQL. Implement security measures within SAP Business Warehousing applications. Use extraction, transformation, and loading tools for daily manipulation and monitoring of data. Perform datawarehouse system administration utilizing customized extractors, information objects, datasources, Infocubes, update rules and transfer rules design, data scheduling, information sets. Use reporting tools like Business Explorer analyzer, browser and web enabling interfaces. Provide post-implementation support.

Need Master's degree in Management or Computer Science. Need 2+ years of experience in related occupation.

Send Resume to: Ms. Kathylene Theus, 10701 Corporate Drive, Suite #380, Stafford, Texas 77477 or send via e-mail to: ktheus@panex-usa.com

Corpus, Inc. is a leading consulting and technology services firm based in Dallas, Texas, providing innovative B2B, enterprise integration, and E-commerce solutions. Our company currently has openings for the following:

**Senior Software Engineers:** Research, design, develop, and test new computer and enterprise applications using Active Server pages and Visual Basic technologies. Create software program designs, analyze customer requirements, and develop solutions using Oracle and Oracle Applications. Develop software solutions testing procedures and design and implement interfaces among systems. Need Master's in Computer Science or related field. Need 2+ years of experience.

**Programmer Analysts:** Analyze, design, develop, test, and implement programs for enterprise applications using Webmethods, eGate Seebeyond, Hummingbird-Enterprise information portal, Biometrics, Oracle applications, Active Server pages, Microstation, GIS, Cable and Auto CAD. Need Bachelor's degree in Engineering, Computer Science or related field. Need 2+ years of experience.

Send Resume to: Corpus, Inc., HR Manager Ekta Singh, 1300 Walnut Hill Lane, Suite #250, Irving, Texas, 75038, via fax: (972) 580-1877, or via email to: jobs@corpusinc.com.

**Customer Education Engineer** National Instruments, an Austin-based tech co. seeks Engineer to create written, online and electronic technical materials; identify training needs to design and develop technical training curriculum for internal/external customers; design courses and develop workbooks/trainer notes; ensure exams and procedures updated. Involved with products from concept to final release to ensure timely course development. Req. B.S. in Engineering and 1 yr exp in job or as Sales Engineer. Fax to Raja Faris @ 512-683-6924. Code ZCE.

**Computers** National Instruments Corp is a fast growing Hi-tech Co based in Austin, TX and is currently seeking to fill multiple positions in the following:

**Software Engineers** Research, design & develop software in mainly C/C++ using OO design & software design principles. Must have Bachelors in Engg. or Comp Sci or Physics or Math. CODE: ZSW

**Applications Engineers** Develop applications for products, systems and new business opportunities. Provide technical support for software products and their applications to customers, sales engineers, and distributors. Resolve technical issues using an understanding of electronics and software programming fundamentals. Must have Bachelor's in Engineering or Computer Science, or Physics or Math. CODE: ZAE

**Computer Hardware Design Engineers** Research, develop & manage projects in data acquisition, signal conditioning, industrial communication, instrument control, image acquisition, embedded controllers & ASIC products using design techniques in analog & digital circuit design, computer architecture, communication bus interfacing & digital signal processing. Must have Bachelors in Engg, Comp Sci, or Physics or Math. CODE: ZHE

**Programmer/Analysts (Business Processes)** Plan, analyze, design, develop & test software using Oracle, Lotus Notes, Web; use GUI & object-oriented design to develop user interfaces & data entry screens that support business functions. Bach in Info Sys or Comp Sci or Business Admin. CODE: ZPA

**Staff Programmer/Analysts** Evaluating applications development projects, leading a team of Programmer analysts/interns; planning, analyzing, designing, developing & testing software using Oracle & Lotus Notes; using GUI & object-oriented design to develop user interfaces & data entry screens. Bach. needed and 2 years as Programmer/Analyst. CODE: SPA

Fax resumes to: Raja Faris, National Instruments Corp at 512-683-6924. Job Code must appear on resume.

**Director, Information Technology** Springdale, Arkansas Manage company IT department to provide efficient information management system to support business processes. Specific duties include: 1) plan and direct various development projects of information management system running in a JDEdwards AS/400, Data Warehousing technology, WAN technology, and PC LAN Networks environment; conceive and develop IT strategy, action plans and budget in conjunction with the general business strategy of parent company and its subsidiaries; implement and enforce procedures for IT department in accordance with best practices and ALTO U.S.' ISO 9001 TQM Manual; consult and coordinate with the Denmark parent company and other affiliates in English-Danish bilingual capacity in develop and maintenance of IT policies/standards, as well as systems integration. Requires Master's Degree in Computer Science or Business Administration with emphasis on MIS and minimum 7 years experience in IT department and/or project management. Competitive salary; 40 hr/week; Mon.-Fri., 8:00am - 5:00pm. Resume to: VP Human Resources, ALTO U.S. Inc., 16253 Swingley Ridge Rd., Suite 200, Chesterfield, MO 63017. No call/EOE.

**TECHNOSOL TECHNOLOGIES, L.L.C.** is a rapidly growing computer, e-business and technology solutions provider with expertise in the latest developments in information technologies and IT applications and services. We are currently looking for the following:  
**Programmer Analysts:** Candidate must be able to design and code applications to meet user requirements and specifications using Visual Basic 6.0, MS Visual SourceSafe 6.0, and Active Reports. Debug and compile code to correct errors. Conduct maintenance and testing of implemented applications to enhance performance and fix problems/bugs throughout the life cycle. Engage in database development by writing and enhancing stored procedures, triggers, and functions using MS SQL Server 7.0/2000, Business Objects, and Lotus Notes. Requires a Bachelor's degree in Management Information Systems or Computer Science or related and 2+ years of experience. Send Resume to: Madhavi Singh, President, Technosol Technologies, L.L.C., 12025 Tambourine Dr. Stafford, TX 77477 or send via e-mail: technosol@technosoltech.com

**Software Programmer; Dallas, Texas:** Plan, develop, test & document programs to meet user requirements. Prepare flowcharts and diagrams. Design screen displays. Convert data into instruction for coding into computer language. Enter codes and test programs. Replace or modify codes. Master's degree or equivalent in Electrical Engineering or Computer Science. Coursework must have included C, C++, Visual Basic, ASP, Java Script, SOL, UNIX, Telecommunications Network Operations, Data Networks Configuration and Administration, Database Programming and Administration, COM/COM+, Distributed Application Design, Development and Implementation. Send resume to Karen Parente, Direct Insite, 80 Orville Dr. Bohemia, NY 11716.

**Database Analyst III** wanted by WI pharmaceutical mfr. Analyze, design and develop various database applications and front-end interfaces; develop applications using standard development tool sets; create and execute detailed plans to test the validity and reliability of developing sys.; develop technical coding specifications; analyze user requirements for design specifications. Req. BS in Comp. Sci. or Electric Engg. or equiv., & 5 yrs. exp. in database application development. Respond to: C. Crawford, HR Dept. @ F. Dohmen Co., W194 N11381 McCormick Dr., Germantown, WI 53022.

**Software Engineer:** Full time. Competitive salary offered. Requires bachelors degree in computer science or electrical or electronics engineering and one year experience. Experience to include: use of PeopleSoft; design of web sites. Must have proof of legal authority to work permanently in the U.S. No phone calls. Interested applicants should send resume to: Masood Ahmed, The Infologic Group, Inc., 504 W. Torrey Pines, Vernon Hills, IL 60061.

**Medical Billing Systems Analyst-Programmer** needed by a medical billing services company in Chicago, IL. Must have a Bachelor's degree in Business Administration with concentration in Management Information Systems. 1 year experience in electronics/computerized billing. Respond to: President, Chicago Medical Billing Specialists, 3209 N. Natchez, Chicago, IL 60634.

**Application Analysts & Developers.** Software (Reynolds DMS & auto products) apps design & development using Java, Visual Interdev, VB, VC++, Businessware, SQL Server 2000 & ASP/IS 5.0. Req. BS in comp sci, engg, or related field & 1-2 years of exp in programming, developing, or analysis. Resumes to: K. Cramer, Reynolds and Reynolds, PO Box 2608, Dayton, OH 45401

**Business Analyst** wanted by Elmhurst IL. co. Develop, implement, test & maintain financial report systems using Baan software. Requires MS in Business or Comp sc. & 5 yrs exp. Reply to: Christopher Ther, Scholle Corporation, Suite 300, 360 W. Butterfield Rd, Elmhurst, IL 60126.

**Sr. Prog. Analyst.** 40 hrs/wk, 8-5, \$50,000/yr, ana, design, dev. enhancement of soft appl using Smalltalk, Windows, OO Tech, travel may be required. 3yrs exp BS req. Apply by resume only at Colorado Dept. of Labor and Employment, Employment Programs, Attn. Jim Shimada, Two Park Central, Ste. 400, 1515 Arapahoe Street, Denver, CO 80202. J.O. CO5011305

**Snr. Software Engineer.** Install & maintain Internet Application & Oracle/SOL Servers on NT/Unix operating system. Write application programs & administer database scripts. Provide tech. support. Req: Masters in Computer Science. 40-hr. wk Job/Interview Site: Pasadena, CA. Please send resume to Montgomery Watson Harza, 300 N. Lake Ave., Suite 1200, Pasadena, CA 91101, Attn: D. Arcaro

Several computer related positions available for large software development, support and sales company. Degree, technical skills & experience vary per position. Send resume to Jim Pearce, Thru-Put Corporation, 2099 Gateway Place, Suite 240, San Jose, CA 95110.

**System Config Tech** - set up, configure, customize & integrate office tech to enhance & expand client's computer ops w/software pkgs & solutions. Ensure QA stds met for prod shipment. 9am-5pm. Bach in CIS. 3 mos exp. or 3 mos as Comp Info Support Specialist. E-mail resumes to jobs@equitrac.com

**ERP Consultant,** Edison, NJ. Must have Bachelor's degree or US equivalent in Comp. Sc., Engg. Proficiency with SAP & RDBMS (e.g. Oracle), 5 yrs of exp. in the job duties or Comp. Software Developing and/or Consulting. Send resume to HR Dept., Ref# GG8079, Savant Consulting Group, 505 Thornall St., Ste. 205, Edison, NJ 08837 or fax to 732-744-0135 (no phone calls please).

**ADABAS NATURAL AIX/UNIX PSSP RS 6000 HACMP CISCO WEB - JAVA VB C++ ORACLE TIVOLI SAN NETWORKING ENGINEERING SIDEWINDER**  
Call Mike Sullivan  
Mutual Computer Consulting, Inc.  
964 3rd Ave. 31st Floor  
New York, NY 10155  
800-310-9744  
E-mail to: mutuaic@attglobal.net

**Software Engineers & Programmers.** Design and develop firmware modules and drivers for Gigabit Ethernet, PCI-X fibre-channel controllers. Enhance & modify networking protocol stacks and storage I/O stacks. Develop Linux kernel modules to support proprietary hardware. C & RISC Processor languages utilized. Multiple positions. Prevailing wage & benefits. Arlette Kingery, iVivity, Inc. 5555 Oakbrook Parkway, Ste. 280, Norcross, GA 30093.

**MILLIONS OF READERS**

**MILLIONS OF SURFERS**

**ONLY THOUSANDS OF DOLLARS**

**TOTAL IMPACT TOTAL SAVINGS**

Put your message in ITcareers and ITcareers.com and reach the world's best IT talent.

**IT CAREERS**  
where the best get better  
1-800-762-2977

ITcareers.com

**Solid results, record speed - IDG Recruitment Solutions.**

**Call Janis Crowley at 1-800-762-2977**





Systems Analyst sought by  
Comp. co. in Skillman, NJ. Must  
possess Associate's degree in  
any field & 3 yrs exp in systems  
development. Send resume  
to Optimal Solutions, Inc, 3  
Richmond Dr, Skillman, NJ  
08558.

Sr. Technical Specialist/Sr.  
Software Engineer needed by  
Engineering consulting co, in NY.  
NY. Must have MS in Geogra-  
phy/Comp Sci & 5 yrs exp in  
tech direction, mgmt & software  
development for digital mapping,  
GIS (Geographical Info Systems),  
image processing & photogram-  
metry projects using Oracle, Arc  
Info, ERDAS & related software.  
Respond to: Parson Brinckerhoff  
Ouade & Douglas, Inc, Attn:  
Jules Lowess, One Penn Plaza,  
NY, NY 10119.

Software Engineer: Wanted by  
optical networking system  
developer in Oceanport, NJ.  
Master's degree or equivalent  
in Electrical Engineering or  
Computer Science and a  
minimum of 5 years of experi-  
ence in Real-Time Programming  
for Telecommunications products.  
Respond to: Doreen Connors,  
HR Dept. (ref#\_007), Tellium,  
Inc., 2 Crescent Place, Oceanport,  
NJ 07757.

Programmer/Analyst (4 openings):  
Design, test, code, implement  
and maintain for internal and  
external web-based 3-tier appli-  
cation architecture projects using  
HTML, J2SE, Java SERVLETS,  
XML, EJB, Apache-JServ, Java-  
script. Req. B.Sc. or its foreign  
degree equivalent in C. Sci., EE,  
or other related field w/ at least 2  
yrs. exp. in job offered. Resume to:  
HR Manager (job code CW0102),  
Ptek Holdings, 3399 Peachtree  
Rd. N.E. Ste 600, Atlanta, GA  
30326

Senior Systems Administrators.  
Systems Admin. including enter-  
prise level network design/  
implementation for mission critical  
operations with Visio 2000, Pro-  
tocols, TCP/IP, Netbieu, DHCP,  
SNMP, DNS, VPN, PKI, RSA  
Keys and other related tools,  
MS OS, Windows NT/2K/2000,  
SQL, Exchange, SMS, Proxy  
Terminal Server. Prevailing wage.  
3 yrs. exp. in job offered. Please  
send resume to Christie Tucker,  
SourceTec, Inc., 292 South Main  
St., Suite 500, Alpharetta, GA  
30004. EOE.

Software Engineer needed to  
dsgr, dvp, maintain & test s/ware.  
Apply to Global Consultants, 601  
Jefferson Rd, Parsippany, NJ  
07054

Several computer related  
positions available for a large  
spring water production  
company. Degree, technical  
skills & experience vary per  
position. Send resume to  
Frank Stinger, Suntory Water  
Group, Inc., 5660 New  
Northside Drive, Suite 500,  
Atlanta, Georgia 30328.

Mrs. Smith's Bakeries, LLC, in  
Suwanee, GA, needs an EC  
Developer to develop, maintain,  
and support e-commerce software  
programs. Bachelor's degree in  
electronics communication engi-  
neering, comp sci or related field  
+ 2 yrs of exp in the job offered  
OR 2 yrs exp w/ info systems  
& tech, SAP Integration, EC  
initiatives, Interface/Integration  
design, development & mapping.  
Resumes to: D. Ouian, Mrs.  
Smith's Bakeries, LLC, 2855  
Rolling Pin Lane, Suwanee, GA  
30024.

Systems Analyst for NJ based  
Co for job loc throughout the US.  
Must have Bachelor's degree  
in Comp. Sc. or Engg. & 3 yrs  
of s/ware exp. Skill set used  
RDBMS, VB, Com/DCom, HTML,  
ASP, XML. Respond to: MJ  
Technologies of NJ, Inc., 762  
Green St., Ste. #2C, Iselin, NJ  
08830. (Ref. RG7968).

Software Developer, Columbia,  
MD. Design, develop, debug, &  
administer computer application  
systems to track & optimize  
business operations of client  
companies using Oracle database  
server, SOL, PL/SOL, SOL  
Loader, Developer 2000 suite,  
JAM Report, JAM Screens, C,  
Proc, & Unix Shell Scripts. Provide  
technical support to maintain the  
systems. Required B.S. or  
equivalent in Computer Science  
or related field and 2 yr related  
exp. M-F 40hrs/wk + O/T as  
needed. Send Resume to J.  
Brigham, HR #13002, TEK  
Systems Inc., 6992 Columbia  
Gateway Drive, Columbia, MD  
21046.

InfiniSwitch is a leader in Infini-  
Band switching technology for  
data centers. We are currently  
seeking Software Quality Assur-  
ance Engineers. Our Software  
Quality Assurance Engineers  
will work with the InfiniBand  
specifications and with input  
from other engineering team  
members to isolate and expose  
system and sub-system problems  
and develop resolutions. They  
will also develop and execute  
test plans and cases required to  
fully test and qualify Infiniband  
Switch products, and conduct  
software integration testing,  
load/performance testing and  
install Operating Systems and  
Networks. Requirements include  
a MS in CS or closely related  
and two years experience as  
Software Quality Assurance  
Engineer (or will accept BS in  
CS and five years experience,  
two of which are in OA). Also  
required is high degree of profi-  
ciency working with following:  
Linux or Windows 2000 operating  
systems; Network switches, fibre-  
channel SAN components, or  
SNMP Management testing; and  
application load/artificial traffic  
load generation, test automation,  
or performance testing. Interested  
applicants may send their resume  
to Human Resources, InfiniSwitch  
Corporation, 134 Flanders Road,  
Westborough, MA 01581. F 508-  
870-3146.

IT Database Administrator I  
- Boston, MA, Evergreen  
Investments. Design, develop &  
maintain the testing & prod. of  
database architectures. Reqs.  
BA in Mech. Eng., Computer  
Science or rel. disc. & 2 yrs exp.  
in the pos. off. or as Network  
Admin., Developer, or System  
Support Eng. The 2 yrs of reqd  
exp must have incl. work w/ web  
enabling databases w/ SOL  
Server 7.0, ASP & JavaScript  
tech. 1 yr of reqd exp must incl.  
work w/ networking & Oracle. 6  
mths of reqd exp. must incl. work  
Sybase Adaptive Server &  
AutoSys job Scheduler. Must be  
MCDBA and MCSE certified.  
40hrs/wk, 8-5, \$68,000-\$80,100.  
Send resume & cvr. ltr. to Luzanna  
Korshuk, 200 Berkeley Street,  
Boston, MA 02116.

SOFTWARE DEVELOPER to  
design, develop, analyze and  
implement business application  
software systems on AS/400,  
Windows and UNIX in Access,  
SQL or DB2/400 databases using  
RPG, SOL Server and Oracle;  
C++, VBasic and web-based  
technologies requiring perfor-  
mance tuning, peer-to-peer  
networking and distributed  
database management. Require:  
B.S. in Computer Science/Infor-  
mation Systems and three years  
experience in the job offered.  
Competitive salary and benefits.  
8:30 am to 5:30 pm, M-F. Apply  
with resume to: Corporate H.R.  
Manager, The Profit Recovery  
Group, 2300 Windy Ridge  
Parkway, Suite 100 North,  
Atlanta, GA 30339-8426.

Dynamic Systems, Inc.  
Programmer/Systems Analyst/  
Business Analyst  
Internet: Java, JSP, EJB,  
WebSphere, WebLogic, Perl, CGI,  
VB, ASP,ADO,MTS,IIS  
Admin: AIX, HP-UX, Solaris,  
Unix, Oracle, Sybase, SOL  
Server, DB2, Informix  
Skills: RDBMS, Unix, C,C++,  
AS/400, RPG, IBM MF Cobol,  
DB2, C/lintrial, LIMS, Oracle  
Clinical  
1086 Livingston Ave Suite#3  
North Brunswick, NJ 08902  
650 N Cannon Ave, Lansdale,  
PA 19446  
Phone: 732-246-2297  
Fax: 732-246-3362  
job@dynamicssystem-inc.com  
WWW.Dynamicssystem-inc.com

F/T Sr. Computer Software  
Engineer. Responsible for  
developing, directing & assisting  
in the preparation of complex  
application program solutions as  
well as computer programs in  
the creation & maint. of new &  
existing programs using Java,  
JavaScript, Java Swing, JDBC,  
EJB, Sun Solaris, Together  
Enterprise 4.2, Weblogic 5.1,  
Oracle 7.3.4, & 8i, Unix, PL/SOL  
& Visual Café. Conduct detailed  
analysis of all defined system  
specifications for changes in  
system & customer requirements  
or equipment configuration &  
develop all level flow charts.  
Perform system testing & analyze  
& troubleshoot defects found.  
Must have Bachelor's degree  
in CS, Electronics & Commu-  
nications Engineering or related  
field. Foreign degree equivalent  
accepted. Must have 5 yrs. exp.  
in job offered or position w/same  
duties. Salary: \$75,000. Send  
resume: Nytasha Lyttle, SITA,  
3100 Cumberland Blvd., Suite  
200, Atlanta, GA 30339.

#### PROGRAMMER ANALYST

Analyze & eval. existg. or proposed  
software sys. Dvlps., implmts., &  
improves prgms., sys. & related  
procedures to process data  
using in-depth knowl. of the sys.  
dvlpmt. life cycle. Encodes, tests,  
debugs & installs opr. pgms. &  
other sys. software utiliz. knowl.  
of RDBMS environments and  
prog. langs. Bachelor's deg. or  
equiv. in Comp. Sci., Math,  
Engrg., Bus., or Commerce plus  
2 yrs. of exp. in position offered  
or as a Software Engr., Software  
Consultant, or Sys. Analyst rqd.  
Exp. must incl. a) RDBMS:  
Oracle or Sybase; & b)  
PROGRAMMING LANGS.: Java  
or COBOL or PL/SOL. High  
mobility preferred. 40 hrs/wk,  
8 am - 5 pm, OT as rqd.,  
\$66,829/yr. Qualified applicants  
report/submit resume to: Fayette  
County Team PA CareerLink,  
ATTN: JS Supervisor, 32 Iowa  
Street, Uniontown, PA 15401-  
3513. Refer to Job Order No.  
WEB221896.

Trader Manager positions. Direct  
and coordinate activities con-  
cerned with buying & selling  
securities for proprietary brokerage  
firm. Screen, select & hire  
proprietary traders. Direct in-  
service training. Develop & im-  
plement plans to ensure compli-  
ance of traders with established  
programs, procedures and prac-  
tices. Establish internal control  
procedures for margin accounts,  
short sales, etc. Review recapit-  
ulation of daily transactions to  
ensure compliance with rules  
and regulations, etc. Analyze  
operations for potential cost  
savings and program improve-  
ment. Conduct staff meetings  
of personnel to explain new  
policies and how to increase  
profitability. Bachelor's degree or  
equivalent in business, economics,  
finance or related. Securities  
trader license and Series 24  
mgmt license. 1-2 yrs. exp. pro-  
prietary trading. 9-5. Send  
resume to TM, PO Box 5275,  
New York, NY 10185-5275.

Several computer related posi-  
tions available for large trans-  
portation and logistics services  
company. Degree, technical skills  
& experience vary per positions.  
Send resume to Human Re-  
sources, Ref.# SK(G) at United  
Parcel Service, 2010 Warsaw  
Road, Roswell, GA 30076.  
Employer will not sponsor visas  
for positions.

## SIEMENS

### Take a Closer Look.

It's a great feeling to work for a company and  
know you really belong there. When the envi-  
ronment, the people, and the opportunity  
exceed your expectations and your hard work  
is appreciated.

#### Software Engineer

We are seeking a Software Engineer to design  
and implement key complex product enhance-  
ments and features. Other responsibilities  
include assisting the manager and advisory pro-  
grammer analysts with research for setting  
product directions and development process.  
Requirements include a Master's Degree (or  
equivalent) in CompSci, Engineering, or related  
field and 2 years of related work experience.  
Must also have prior experience in product  
development, planning, installation/support,  
and using formal methodologies including  
object-oriented, structured or business process  
modeling. Proficiency in JAVA, UML, Visual J++,  
XML, JAVA Script, MS-SQL, Windows 2000/NT,  
CCC Harvest, Select Enterprise, and Rational  
Rose required.

Siemens Health Services specializes in develop-  
ing clinical, financial, and management solu-  
tions that support leading health providers  
across the continuum of care. As an integral part  
of our organization, you'll enjoy highly competi-  
tive compensation, including a wide array of  
benefits, and professional development oppor-  
tunities.

Isn't it time you took a closer look?

FAX: (610)219-8266  
Email: [human.resources@smed.com](mailto:human.resources@smed.com)  
Source Code: RADMCPW00H  
[www.smed.com/careers](http://www.smed.com/careers)

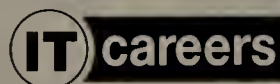
Equal Opportunity, Affirmative Action Employer.

SOFTWARE ENGINEERS (8  
positions) require Bachelor's  
or equivalent in Engineering/  
Computer Science/Mathematics/  
Science or closely related field  
with experience providing skills  
in described duties, at \$70,000  
per year; Senior Software Engi-  
neers (8 positions) with Master's  
or equivalent and experience, at  
\$75,000 per year. Provide on-site  
consulting in design, analysis  
and development of software  
applications for legacy systems  
in IBM mainframe environment;  
development and administration  
in Oracle, DB2, SOL Server and  
Sybase; e-commerce and web  
applications development in  
Microsoft, Java and related  
technologies; network manage-  
ment systems development with  
Netscape Server and related  
tools; SAP R/3 applications on  
Windows with DOS and ABAP/4  
and related modules. 40% travel  
to client sites in United States.  
Mail resumes to: Y & L Consulting,  
Inc., 7550 I H 10 West, Suite  
940, San Antonio, TX 78229.

Sr. IT Consultant/Project Lead,  
Columbia, MD. Manage concep-  
tual, logical & physical design  
of application development, &  
design/develop schemas, stored  
procedures, triggers, objects,  
object models, etc.; manage  
full-system development life cycle  
of client project using MS Project  
2000; manage source code using  
MS Visual Source Safe 6.0;  
develop & execute test scripts &  
conduct stress testing; manage  
deployment of application from  
development - to staging & to  
production environments. Req'd.  
MSIF or equiv. & 2 yrs rel. exp.  
M-F 40hrs/wk + O/T as needed.  
Freq. relocation within U.S. may  
be necessary. Send Resume to  
J. Brigham, HR #13102, TEK  
Systems Inc., 6992 Columbia  
Gateway Drive, Columbia, MD  
21046.

Programmer/Analyst: Develop  
basic applications for using MFC  
and ODBC to communicate with  
MS SQL database for inventory  
control and automation. Write  
programs to utilize LabView soft-  
ware for automated equipment  
testing for Engineering Dept.  
Maintain and test reliability and  
consistency of applications.  
Perform unit testing, monitoring,  
fine-tuning, trouble shooting and  
bug-fixing duties. Write specifi-  
cations and documentation as  
requested within level of experi-  
ence. Assist O.C. Dept. with  
automation and use of spectrum  
analyzer, noise figure meter, and  
network analyzer. Work within a  
multinational and multilingual  
work environment and interface  
with IT and Engineer personnel  
at vendors and OEM customers  
in North, Central and South  
America and at manufacturers  
and suppliers in China and  
Taiwan. Req. BS in CS or CIS  
with 9 months experience in job  
offered or as programmer. Profi-  
ciency in C++, MS SQL, AutoCAD.  
\$48,000.00 per year, 40 hr/wk, 8-  
5. Send resume to Dir. Of HR,  
Pro Brand International, Inc.,  
1900 West Oak Circle, Marietta,  
GA 30062

Network Administrator (Multiple  
Openings): Install/maintain  
network & oversee network  
security; troubleshoot in Cisco  
Routers, IIS 4, Exchange Server  
5.5 & Universe Pick; support  
computer/LAN integration; provide  
backup & disaster recovery with  
RAID implementation on Novell,  
Microsoft & Unix networks/  
servers. Req 5 yrs work exp as  
Network Administrator, IT Man-  
ager or related occupation. Hrs.:  
8a-5p, M-F. Send resume to  
Wellington Leisure Products,  
Inc. PO Box 244, Madison, GA  
30650 RefLG



where the best get better  
1-800-762-2977



**BRAINSTORM GROUP & GIGA INFORMATION GROUP®**  
Present

**eBusiness integration™**  
CONFERENCE SERIES

The eBusiness Integration Conference Series is the leading forum specifically designed to provide business and IT leaders with solutions to the full spectrum of e-business integration challenges.

Featuring leading analysts, authors and end user case studies, this series details the business driven strategies, the latest technological advancements, proven "Best of Breed" solutions and trends in e-business integration.

*Join us for actionable advice, invaluable networking opportunities and practical solutions to your most pressing e-business integration challenges.*

**Conference Co-Chairmen**

<b>Ken Vollmer</b> Research Director B2B Integration Strategies Giga Information Group	<b>William M. Ulrich</b> President Tactical Strategy Group, Inc.
---	--

Produced by

**BrainStorm GROUP, Inc.** **GIGA**  
Giga Information Group®  
Technology advice.  
Business results.

**End-to-End Integration Strategies & Solutions**  
2002 Event Schedule

- Chicago - March 25-27
- New York - Sept. 23-25
- San Francisco - Nov. 4-6

Request a Brochure Online & Be Entered to Win a 3-Day Pass (a \$1495 value)!

**www.brainstorm-group.com T: 508-393-3266**

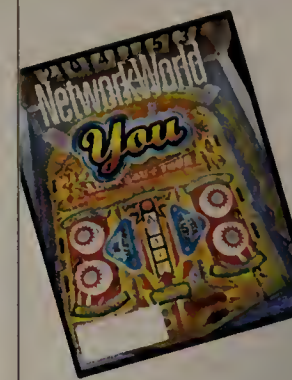
Since its founding in 1927, Schlumberger has grown into a \$9.6 billion company employing 65,000 people in over 100 countries & serving customers in the oil, electronics, aerospace, & utilities industries worldwide. Schlumberger Technology Corp. APC currently has openings in our Austin, TX office for:

**Software Engineer JC1** - Maintain, develop, & improve current product line based on Java Virtual Machine, utilizing Java, C/C++, Visual Basic, & Assembler. Develop & deliver secure java card embedded verifier. Provide internal technology expertise support on banking products included in Company's Cyberflex smart card product line. Coordinate smart card projects with international affiliates. MS in Computer Science or Electrical/ Electronics Engineering w/coursework and/or experience in quantum optics & semiconductor chips used in smart card products.

**Software Engineer LS4** - Work as an expert on GSM applications. Develop cryptographic data processing software w/ cryptography & key management techniques. Write personalization script & controller configuration using Interpreter Engine, Supervisor software, & QC Program. Program on software tools that have clear logical structure using Assembly, Visual Basic, C/C++, Java, & programming w/databases for more efficient personalization & validation. Understand features of different types of SLB smart cards such as Open Platform cards, GSM cards, & Generic cards for areas like secure web, banking, & mobile communications. Set up & maintain configuration management & version management tools such as CMV & PVCS. MS in Computer Science w/ coursework &/ or training in logical proof construction for software design.

**Senior Software Engineer LS5** - Design & implement data acquisition software components for an oilfield services application supporting drilling & wireline real-time measurements. Utilize Rational Rose, UML, COM+, & Visual C++ with frontend Motorola 68000-based hardware & a PC-based acquisition & processing system w/ Microsoft Windows 2000. Master's in Computer Science or Electrical/Electronics Engineering & 2 yrs. experience as a Software Engineer developing applications on Windows & real-time systems utilizing OOAD & UML design w/C++.

Please include Reference # & send resumes to [personnel@austin.oilfield.slb.com](mailto:personnel@austin.oilfield.slb.com)/fax to (512) 331-3204/mail to: Schlumberger, Personnel, ATTN: Ref#, PO Box 200015, Austin, TX 78720-0015. EOE See our Schlumberger website: <http://www.slb.com>.



**Reading  
someone  
else's  
copy of  
Network  
World?**

Apply for your own  
**FREE**

subscription go to  
[www.nwwsubscribe.com/pa](http://www.nwwsubscribe.com/pa)  
and subscribe today!

Week after week NW gives you late breaking news and in-depth insights on infrastructure, carriers and ISPs, enterprise applications, technology updates and management strategies.

Plus...

- Enterprise level product testing
- Product Buyers Guides
- Management surveys
- Signature Series Special Issues

Apply for your **FREE** subscription today  
[www.nwwsubscribe.com/pa](http://www.nwwsubscribe.com/pa)

**NetworkWorld**  
**THE LEADER  
IN NETWORK  
KNOWLEDGE**  
Print • Online • Events

**dice.com**

The tech game has changed.  
How you win, hasn't.

The tech game can change all it wants to, but savvy technology professionals still know how to win with Dice.com. Show change who's the boss. Visit Dice.com today.

**dice.com**  
nobody gets IT like Dice.™

## NET2S

Network Service Solutions  
NET2S is a leading International Consulting and Engineering firm specializing in communications technologies. We are presently seeking to fill the following positions:

- Sr. SAN/Unix Engineer
- TIBCO Engineer
- Sr. Security Systems Engineer
- Sr. Tibco/MQSeries Developer

All positions require BS/MS degree with a minimum of 2 to 3 years of experience in the field. Must possess excellent communication skills as well.

NET2S, 82 Wall Street Suite 400, New York, NY 10005; Fax: (212) 279-1960; Phone (212) 279-6565; or Email: [jobus-ny@net2s.com](mailto:jobus-ny@net2s.com)

Object Resources, Inc.'s Information Technology Consulting and Professional Services divisions currently have multiple openings for systems development/consulting positions: (locations include Lenexa, KS, Kansas City, MO, Stamford, CT, and Austin, TX).

Programmer Analysts  
Systems Analysts  
Software Engineers  
Support Analyst Supervisor  
Project Managers

Positions available at Bachelor of Science/Master of Science (or foreign equivalent) levels.

Please indicate specific title and location of job for which you are applying on your application letter. Applicants must have proof of legal authority to work in the United States. Please send resume to:

Attn: Human Resources  
Object Resources, Inc.  
9300 Renner Blvd., Suite A  
Lenexa, KS 66219

## COMPUTER PROGRAMMER ANALYST II - ISSM

Looking for two Computer Programmer Analysts (position numbers 991921 & 991922) with a minimum of 3 years work experience in the use of JAVA Development and 2 years experience in the use of J2EE components.

Also looking for a Computer Programmer Analyst (position number 991920) with a minimum of 3 years experience with OS/390 COBOL, TSO/CLIST, IMS DB/DC and OS/390 architecture who will be responsible for the entire life cycle planning, analysis, design, code, test and production support) for individual software applications. The position will provide support to the current mainframe.

Salary commensurate with experience up to \$53,000/year. Employer also pays up to 77% of health insurance, 80% of term life, and 7.3% of salary into retirement. Vested after 6 years.

Visit our website for more job specific details and to submit an application. [http://www5.myflorida.com/cf\\_web/jobs.html](http://www5.myflorida.com/cf_web/jobs.html)

A new  
millenium,  
a new  
solution.


ITcareers.

**IDG RECRUITMENT  
SOLUTIONS**

Trusted by  
more  
hiring  
managers  
than any  
IT space  
in the  
world.

**ITcareers.com**





# MAKE YOUR OLD JOB JEALOUS.

Few companies see the full scope of the contribution IT can make to their business. Fireman's Fund, a leading insurance company, will actively empower you to make that difference. Our Shared Services infrastructure positions you to make decisions with a tangible impact on the profitability of technological solutions. We'll give you the accountability you crave and inspire you to make the most of it – with lucid guiding principles, energized co-workers, and exceptional rewards. With your commitment, and that of our global parent, Allianz AG, there's nothing we can't accomplish.

## Application Developer

Advance your coding, testing and debugging skills leading development of a platform-independent user interface for OS/2 applications. Create new N-Tier applications and critically analyze vendor proposals and solutions.

## Business Systems Analyst

Play a key role creating IT solutions to enable achievement of business goals. Interview users and conduct feasibility studies to determine system specifications, then implement testing and ongoing evaluation of solutions. Responsibilities range from promoting efficiencies within client business areas to facilitating workflow within IT.

## Project Manager

Manage multiple IT projects such as business applications, architecture, data marts, operational data stores and infrastructure. Take responsibility for the complete project lifecycle from developing tactical and strategic approaches to cost/benefit analysis and risk assessment.

## Web Application Developer

Analyze requirements, design and program applications for Enterprise e-Business projects, working closely with consultants, business analysts and other developers. Applications will primarily be deployed on WebSphere servers running on AIX platforms.

These are examples of the types of positions you may find at various locations of Fireman's Fund. Be the first to hear about Fireman's Fund opportunities that are relevant to you, with our newly launched Career Navigator. Take two minutes to register and create your skills profile and we'll match it against every position that becomes available. When a good match comes up you'll instantly be notified by email, and can decide whether to take the next step. It's a great way to let your perfect job find you.

[www.firemansfund.com/careers/ita27.html](http://www.firemansfund.com/careers/ita27.html)

Employees enjoy innovative benefits including professional development opportunities, paid leave accounts, a matching 401(k) program and retirement benefits. Fireman's Fund is an Equal Opportunity Employer, M/F/D/V





## Sales Offices

Carol Lanker, Associate Publisher/Vice President  
Jane Weisman, Sales Operations Coordinator  
Internet: clanker, jweisman@nww.com  
(508) 460-3333/FAX: (508) 460-1237

### New York/New Jersey

Tom Davis, Associate Publisher, Eastern Region  
Fisa Della Rocco, Regional Sales Manager  
Terry Sanders, Account Executive  
Aimee Jacobs, Sales Associate  
Internet: tdavis, elisaa, tsanders, ajacobs@nww.com  
(201) 587-0090/FAX: (201) 712-9786

### Northeast

Donna Pomponi, Regional Sales Manager  
Kathryn Zinn, District Manager  
Caitlin Horgan, Sales Assistant  
Internet: dpomponi, kzinn, chorgan@nww.com  
(508) 460-3333/FAX: (508) 460-1237

### Mid-Atlantic

Jacqui DiBianca, Regional Sales Manager  
Maria Hagan, Sales Assistant  
Internet: jdbianca, mhagan@nww.com  
(610) 971-1530/FAX: (610) 975-0837

### Midwest/Maryland

Eric Danetz, Senior District Manager  
Aimee Jacobs, Sales Associate  
Internet: edanetz, ajacobs@nww.com  
(201) 587-0090/FAX: (201) 712-9786

### Central

Dan Gentile, Midwest Regional Director  
Gracie Vela, Sales Assistant  
Internet: dgentile, gvela@nww.com  
(512) 249-2200/FAX: (512) 249-2202

### Northern California

Sandra Kupiec, Associate Publisher, Western Region  
Miles Dennison, Regional Sales Manager  
Sean Weglage, Senior District Manager  
Carmela Baglione, Account Executive  
Tina Barnes, Sales Operations Manager  
Celina Esquivias, Sales Assistant  
Internet: skupiec, mdennison, sweglage, cbaglione, lluk, tbarnes, cesquivias@nww.com  
(650) 577-2700/FAX: (650) 341-6183

### Northwest/Rockies

Karen Wilde, Regional Sales Manager  
Lara Greenberg, Regional Sales Manager  
Kim Gaffrey, District Manager  
Internet: kwilde, lgreenberg, kgaffrey@nww.com  
(650) 577-2700/FAX: (650) 341-6183

### Southwest

Becky Bogart Randell, District Manager  
Angela Norton, Sales Assistant  
Internet: brandell, anorton@nww.com  
(949) 250-3006/FAX: (949) 833-2857

### Southeast

Don Seay, Regional Sales Manager  
Internet: dseay@nww.com  
(404) 845-2886/FAX: (404) 250-1646

### Custom Publishing

Shaun Budka, Custom Media Solutions Manager  
Internet: sbudka@nww.com  
(508) 460-3333/FAX: (508) 460-1237

### Fusion

Alonna Doucette, Vice President Online Development  
James Kalbach, Director, of Online Sales  
Jeff Schwartz, Online Account Manager  
Stephanie Gutierrez, Online Account Manager  
Debbie Lovell, Online Account Manager  
Kristin Baker, Sales Operations Manager  
Rayna Meleedy, Sales Operations Manager  
Internet: adoucette, jkalbach, jmschwartz, agutierrez, dlovell, kbaker, rmeleedy@nww.com  
(610) 341-6025/FAX: (610) 971-0557

### MARKETPLACE

#### Response Card Decks/MarketPlace

Richard Black, Director of MarketPlace  
Karima Zannotti, Senior Account Manager  
Enku Gubaie, Senior Account Manager  
Cara Peters, Account Manager  
Amie Gaston, Account Manager  
Sharon Stearns, Sr. Media Dev. & Operations Mgr.  
Chris Gibney, Sales Operations Coordinator  
Internet: rbleck, kzannotti, egubaie, cpeters, agaston, sstearns, cgibney@nww.com  
(508) 460-3333/FAX: (508) 460-1192

### IT CAREERS

VP/General Manager, Janis Crowley, East Regional Manager,  
Deanne Holzer, Sr. East Account Manager, Jamie Swartz,  
Midwest Regional Manager, Laura Wilkinson, West Regional  
Manager, Patricia Sheppard, Marketing Director, Kelli  
Flanagan, Operations Director, Donna Kent, Advertising  
Coordinator, Leilani Lopez, Advertising Coordinator, Carla  
Amaral, Marketing Specialist, Heidi Tanakatsubo, Sales  
Support, Tina Silveira, Sales Support, Nikki Wilson  
(800) 762-2977/FAX: (650) 286-2770

## Network World, Inc.

118 Turnpike Road, Southborough, MA 01772  
Phone: (508) 460-3333

### TO SEND E-MAIL TO NWW STAFF

firstname\_lastname@nww.com

Evilee Thibeault, CEO/Publisher  
John Gallant, President/Editorial Director  
Eleni Brisbois, Administrative Planning Manager

### FINANCE

Mary Fanning, Vice President Finance  
Paul Mercer, Finance Manager  
Mary Kaye Newton, Billing/AP Coordinator

### HUMAN RESOURCES/BUSINESS SERVICES

Monica Brunaccini, V.P. H.R./Business Services  
Elizabeth Price, Director of Human Resources  
Eric Cormier, Human Resources Representative  
Frank Coelho, Senior Manager, Business Services  
Lisa Thompson, Business Services Administrator  
Mark Anderson, Business Services Supervisor  
Kevin McMillen, Business Services Coordinator

### MARKETING

TerryAnn Croci, Director of Marketing  
Wendie Larkin, Senior Public Relations Manager  
Barbara Sullivan, Senior Research Analyst  
Johanna Lombardi, Marketing Communications Manager  
Donna Kirkey, Senior Design Manager  
Kristin Wattu, Senior Marketing Specialist  
Judy Schultz, Senior Graphic Designer  
Cindy Panzera, Graphic Designer  
Nancy Petkunas, Marketing Specialist

### GLOBAL PRODUCT SUPPORT CENTER

Nancy Parquette, Corporate Programs and Events  
Manager

### ADVERTISING OPERATIONS

Karen Wallace, Senior Director of Advertising Operations  
Maro Ermyan, Advertising Coordinator  
Veronica Trotto, Direct Response Ad Coordinator

### PRODUCTION

Ann Finn, Senior Production Director  
Greg Morgan, Senior Production Manager  
Mike Guerin, Senior Print Buying Supervisor  
Jami Thompson, Ad Traffic Coordinator

### CIRCULATION

Richard Priante, Senior Director of Circulation  
Darcy Beach, Circulation Operations Manager  
Bobbie Cruse, Subscriptions Manager  
Mary McIntire, Senior Marketing Specialist

### RESEARCH

Ann MacKay, Research Director

### DISTRIBUTION

Bob Wescott, Distribution Manager/(508)879-0700

### IDG LIST RENTAL SERVICES

Paul Capone, Account Executive  
P.O. Box 9151, Framingham, MA 01701-9151  
(800) 343-6474/(508) 370-0825, FAX:(508) 370-0020

### SEMINARS AND EVENTS

Robin Azar, Vice President of Events  
Michele Zarella, Director, Events Business Development  
Sandra Gittlen, Events Editor  
Betty Amaro-White, Event Finance Manager  
Andrea D'Amato, Sales Director/Strategic Partnerships  
Neal Silverman, Senior Director of Event Sales  
Maureen Riley, Event Sales Manager  
Kristin Ballou, Senior Event Sales Manager  
Sandy Weill, Event Sales Manager  
Judy Tyler, Sales Operations Specialist  
Debra Becker, Dir., Marketing & Audience Development  
Amy Letichevsky, Marketing Manager  
Timothy Johnson, Marketing Coordinator  
Jill Keaveney, Senior Event Planner  
Tim DeMeo, Event Coordinator

### ONLINE SERVICES

Alonna Doucette, V.P., Online Services  
Hillary Freeley, Director, Online Audience Development  
Charley Spektor, Director, Business Development  
Adam Gaffin, Executive Editor, Online  
Melissa Shaw, Managing Editor, Online  
Jason Meserve, Multimedia Editor  
Sheryl Hodge, Online Copy Chief  
Marlo Matoska, Senior Web Producer  
Katherine Ward, Web Producer  
Christopher Cormier, Web Producer  
Kris Guay, Associate Web Producer  
Elaine Valovic, Web Researcher

### INFORMATION SYSTEMS/NEW MEDIA SERVICES

W. Michael Draper, V.P. Systems & Technology  
Tom Kroon, Senior Software Engineer/Architect  
Bob Roddy, Web Software Engineer  
Manav Sehgal, Web Software Engineer  
William Zhang, Senior Software Engineer  
Rocco Bortone, Senior Network Manager  
Peter Hebenstreit, Network Specialist  
Kevin O'Keefe, Systems Support Manager  
Brian Wood, Senior Systems Support Specialist  
Joshua Nasar, Systems Support Specialist  
Puneet Narang, Manager of Database Technologies  
Pam Gertsios, Database Specialist  
Anne Nickinello, Director of New Media Services  
Deborah Vozikis, New Media Design Manager  
Sean Landry, Web Producer  
Michael Ferreira, Graphics Production Coordinator

## IDG

Patrick J. McGovern, Chairman of the Board  
Kelly Conlin, CEO

Network World is a publication of IDG, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. IDG publishes over 275 computer publications in 75 countries. Ninety million people read one or more IDG publications each month. Network World contributes to the IDG News Service, offering the latest on domestic and international computer news.

# NetworkWorld

## Editorial Index

### A

Aerie Networks 21  
Alcatel 1, 32  
Alohabob 30  
AT&T Wireless 6  
Avaya 32  
Avian Communications 25

### B

BEA Systems 8  
BellSouth 21  
British Telecom 6

### C

Cable & Wireless 23  
CacheFlow 6  
Cisco 32  
Contour Designs 30  
Cray 16

### D

Dell 16

### E

eConvergent 10  
Electronic Data Systems 23, 34  
Enterasys 6  
Equinix 8  
Exodus Communications 23

### G

GigaFast 21

### H

Hewlett-Packard 8

### I

IBM 8, 23, 33  
InFocus 30  
Intel 8  
Interliant 10

### J

Jamcracker 10

### L

LapLink 30  
Lucent 25

### M

Metricom 21  
Microsoft 6, 8, 34

### N

NEC 30  
NetPlane Systems 25  
Network Associates 1, 14  
Network Plus 23  
Nortel 32  
Ntera 25

### O

Oracle 8, 17

### P

Palm 14

Partnerware 10  
PeopleSoft 17  
PictureTel 34  
PoliVec 17

### Q

Quick Eagle 15  
Qwest Cyber Solutions 23

### R

RightNow Technologies 17

### S

Salesforce.com 17  
Salesnet 17  
SANcastle Technologies 15  
SAP 8  
Shoreline Communications 32  
Siebel Systems 17  
Siemens 15  
SonicWall 25  
Sprint 23  
Sun 6, 8, 10

### T

Telecomputing 10  
TeleCorp PCS 6

### U

UpShot 17

### Z

Zone Labs 17, 21

## Advertiser Index

Advertiser	Page #	URL		
Avaya	9	www.avaya.com	BoldFish	Peregrine Systems, Inc
Avocent Corp	22	www.avocent.com	BoostWorks	Peribit Networks
Buyuptime.com	40	www.buyuptime.com	Brocade	PlateSpin
CTDI	38, 51	www.ctdi.com	Business Layers	Proxim, Inc
Computer Associates	4	www.ca.com	Byte and Switch.com	Qwest
Covalent	26-27	www.covalent.com	Cisco Systems	Radware
Cyclades Corp	39	www.cyclades.com	ClickArray Networks	Raxco
Equinox Systems Inc	39	www.equinox.com	Compaq	Redline Networks
Foundry Networks	19	www.foundrynetworks.com	Computer Associates International	Sangoma
Global Technology Associates	41	www.gta.com	Connectix	Siemens
IBM	2-3, 31	www.ibm.com	DLTape	Silverback
Learnkey Inc	39	www.learnkey.com	Ecora	Space Design Technology
Network Appliance	11	www.netapp.com	Expertcity	SSH Communications
Network Instruments	41	www.networkinstruments.com	F5 Networks	Stalker Software
Partnerpoint	24	www.parnetpoint.org	FineGround Networks	Stardust
Princeton Softech	7	www.storesmarter.com	Fireclick, Inc	Sun Microsystems
Riverstone Networks	52	www.riverstonenet.com	Fluke Networks	Sybase
Rose Electronics	40	www.rose.com	Global Technology Associates, Inc	Sygate Technologies, Inc
Server Technology	42	www.servertech.com	IBM	Telogy Networks, Inc
Toshiba	20	www.toshiba.com	InteQ	UltraDNS
Western Telematic Inc	42	www.wtl.com	Mangosoft, Inc	VNCI
WildPackets	18	www.wildpackets.com	McData Corp	Volera
World Data Products	42	www.wdpl.com	Mercury Interactive	WaveSmith Networks
Xythes	13	www.xythes.com	Mirapoint	Websense
			mWired	Wintinals
			NSI	WinredRed Software
			NetIQ Corp	Zixit
			NetQoS	

### Network World Fusion - www.nwfualon.com

AT&T Netscreen  
Adtran Network Associates  
Agilent Technologies Nckia  
Akamba Northern Parklife  
American Power Conversion Novell  
Appian Communications Opalis Software  
Blue Arc Opticom, Inc



## NetworkWorld seminars & events

date information on our current seminar offerings, call a seminar representative at 800-643-4608 or go to [www.nw.fusion.com/seminars](http://www.nw.fusion.com/seminars).

Publicize your press coverage in Network World by ordering reprints of your editorial mentions. Reprints make great marketing materials and are available in quantities of 500 and up. To order, contact Reprint Management Service at (717) 399-1000 x14 or E-mail: [rrtry@rmreprints.com](mailto:rrtry@rmreprints.com)

These indexes are provided as a reader service. Although every effort has been made to make them as complete as possible, the publisher does not assume liability for errors or omissions.

\*Indicates Regional Demographic



## Alcatel

continued from page 1

switching and voice-over-IP markets, it has no PBX customer base and users and analysts consider it a bit green as a player in the telecom market. Enterasys, Extreme Networks and Foundry Networks do not offer IP voice products. Key channel partnerships that Alcatel has made recently also will help.

Alcatel will introduce the OmniSwitch 8800 for large enterprise backbones, and the OmniSwitch 7700 and 7800 for enterprise wiring closets or midsize enterprise backbones.

The three boxes are being positioned as alternatives to products such as Cisco's Catalyst 6500 and 4000, Extreme's BlackDiamond, Foundry's BigIron and FastIron, and Nortel's Passport 8600 switch.

With support for 384 Gigabit Ethernet ports, the OmniSwitch 8800 tops all competing products in terms of Gigabit density, Alcatel says, while its 8800 and 7000 series products will cost up to 60% less than similarly configured products from competitors.

"Alcatel's switching division has been in the witness protection program for the past two years," says Stan Schatt, vice president at Giga Information Group, pointing out that Alcatel has not had a major switch product release since its OmniCore backbone switch was launched in 2000. The OmniSwitch line, he adds, "will go a long way in getting credibility in large enterprises."

The OmniSwitch 8800 is a 16-slot chassis intended for the core of large companies' net-

works. It can support a maximum of 384 Gigabit Ethernet ports, 680 10/100M bit/sec ports or a mix. Line cards will include an eight-port minigigabit interface converter card and an eight-port Gigabit copper blade as well as 24-port mini-GBIC and RJ45 10/100/1000 cards. In the third quarter, a single-port 10G Ethernet card will be available.

Standard OmniSwitch features include Layer 2-Layer 4 switching and quality of service (QoS) with 802.1p tagging and type-of-service prioritization. For security, per-port virtual LAN authentication — requiring users to sign on to a VLAN through a Remote Authentication Dial-In User Service server — and access control lists (ACL) are also standard.

### Controlling traffic

Three OmniSwitch 8800s will be installed as the core network at Salisbury University in Salisbury, Md., along with an OmniSwitch 7700 and OmniStack stackable switches to replace the school's FORE ATM-based backbone and 3Com hubs. Besides the much-needed upgrade in bandwidth, the QoS and ACL controls also will be useful for controlling traffic, says Jerry Waldron, CIO at Salisbury.

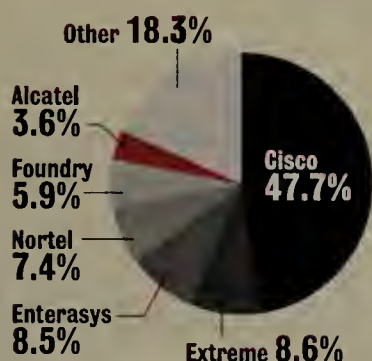
"What we would not like to do is clamp down on one type of file or technology students use," Waldron says, but adds that he plans to use to the OmniSwitch QoS features "to allow students who need to use our databases to have priority over other things."

The OmniSwitch 7700 and 7800 are 10- and 18-slot chassis, respectively, each with 128G bit/sec switching capacity. The

## The lowdown

While Alcatel has lagged in the high-end datacom market...

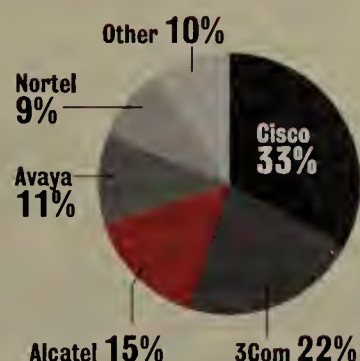
Q3 2001 Gigabit Ethernet switch revenue:



SOURCES: DELL'ORO GROUP, PHILLIPS INFO TECH

... it has a good portion of the U.S. IP PBX market.

Q3 2001 IP PBX shipments, 400-1,000 user systems:



But many challenges remain, including:

1. Using its new end-to-end family of products to win customers.
2. Highlighting circuit-switched to IP migration.
3. Expanding sales channels and integration partnerships.

7700 is aimed at large customer wiring closets and will offer more Layer 3 switching capacity and better failover functions than competing wiring closet boxes, such as Cisco's Catalyst 4000 and Extreme's Alpine. The 7800 could also be used in large wiring closets or in a midsize backbone, according to Alcatel.

Interchangeable line cards for both chassis include two-port GBIC and 12-port mini-GBIC or 10/100/1000 copper ports. Twenty four-port 10/100 cards with in-line power are also available for providing power to devices such as IP phones or wireless LAN access points over Category 5 cable.

Jumbo frames also are supported on all switches for letting Ethernet frames larger than the standard 1.5K bytes be sent, which can be useful for large data transfers between high-volume servers. The three chassis also support redundant management modules for handling management blade failover.

The OmniSwitch line is the first switch from Alcatel that fully integrates the Layer 3 switching and VLAN security technology the company obtained via the acquisitions of Packet Engines and Xylan between 1998 and 1999, according to Giga's Schatt.

"They had real problems with those acquisitions at first because none of the firmware worked together between the Packet Engines and Xylan stuff," Schatt says. "But they've managed to get it all under the same

operating system now, which is significant."

The OmniSwitch 8800 will cost between \$73,000 and \$153,000 depending on configuration, while the OmniSwitch 7700 and 7800 will cost between \$33,800 and \$42,000. All three chassis and all modules will be available in March, with 10 Gigabit blades to come in the third quarter.

### Connecting remote offices

Along with its new enterprise switches, Alcatel is expected to announce two VPN gateways aimed at connecting remote offices to an enterprise headquarters. At the RSA Security show next week, the company will debut the OmniAccess 210 and 250 for small branch offices and large site-to-site VPNs, respectively.

The OmniAccess 210 will offer Triple-DES throughput of 10M bit/sec for 500 VPN tunnels, while the 250 will perform 70M bit/sec of Triple-DES traffic for 2,500 tunnels, according to sources. The OmniAccess 250 increases the number of tunnels by 500 over Alcatel's previous 7137 VPN gateway and puts the company's VPN offering ahead of Enterasys' Aurorian gateway, and on par with Cisco's 3000 series VPN concentrator.

To help push its new gear into U.S. corporate IT shops, Alcatel has signed agreements with channel partners Verizon and Nextira for selling data and voice gear, and IBM Global Services as a network integra-

tion partner.

These agreements will be almost as important as the new products in getting companies to take a look at Alcatel, observers say.

### Convergence is a virtue

One technical advantage for using the OmniSwitch products in an enterprise wiring closet is with voice over IP because the switches' redundant management modules could increase switch availability, says Lawrence Orans, senior analyst with Gartner.

"Before enterprises are ready to deploy IP telephony, they will need to beef up the overall availability of their LANs. Many LAN products already offer increased availability in the core, but not in the wiring closet" switches, Orans says.

Some users agree with this strategy.

"We wanted to make sure that we don't have to turn in these switches when we want to go with voice over IP," says Tony Stancil, Salisbury's data/telecom director, who helped evaluate the OmniSwitches for the school.

Even though IP voice is not an immediate project at the university, Stancil says, "we feel pretty comfortable we will have that capacity with the Alcatel switches in the future because they are both a voice and data company."

Alcatel has been a sleeping giant of sorts in the U.S. enterprise market. The \$22 billion firm has had trouble establishing itself as either a complete network infrastructure provider — like Cisco, Enterasys, Nortel or Avaya — or a high-speed switch maker such as Extreme or Foundry.

Alcatel says one-fifth of its revenue comes from the enterprise market.

"Alcatel is an engineering company," says Farhad Engineer, MIS manager at Sequenom, a San Diego genetics research company.

Sequenom last year installed four OmniCore 5022 backbone switches for its office network, and Engineer says he would consider upgrading to the OmniSwitch products. "Their products are great," he says.

"If anything, they are lousy at marketing," he says. "That's why you don't hear about Alcatel as much as Cisco or Nortel and Lucent and Extreme. Certainly their products match up."



Get more information online.  
DocFinder: 8053  
www.nwfusion.com

■ **Network World** 118 Turnpike Road, Southborough, MA 01772-9108, (508) 460-3333.

Periodicals postage paid at Southborough, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #0385662. Network World (ISSN 0887 7661) is published weekly, except for a single combined issue for the last week in December and the first week in January by Network World, Inc., 118 Turnpike Road, Southborough, MA 01772-9108.

**Network World** is distributed free of charge in the U.S. to qualified management or professional.

To apply for a free subscription, complete and sign the qualification card in this issue or write Network World at the address below. No subscriptions accepted without complete identification of subscriber's name, job function, company or organization. Based on the information supplied, the publisher reserves the right to reject non-qualified requests. Subscriptions: 1 508-490-6444.

Nonqualified subscribers: \$5.00 a copy. U.S. \$129 a year (except Washington, DC, \$136.74); Canada \$160.50 (including 7% GST, GST#126659952); Central & South America \$150 a year (surface mail); Europe \$205 a year (surface mail), all other countries \$300 a year (airmail service). Four weeks notice is required for change of address. Allow six weeks for new subscription service to begin. Please include mailing label from front cover of the publication.

**Network World** can be purchased on 35mm microfilm through University Microfilm Int., Periodical Entry Dept., 300 Zebb Road, Ann Arbor, Mich. 48106.

PHOTOCOPYRIGHTS: Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by Network World, Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of \$3.00 per copy of the article, plus 50 cents per page is paid to Copyright Clearance Center, 27 Congress Street, Salem, Mass. 01970.

POSTMASTER: Send Change of Address to **Network World** P.O. Box 3090, Northbrook, IL 60065.



Copyright 2002 by Network World, Inc. All rights reserved. Reproduction of material appearing in Network World is forbidden without written permission.

Reprints (minimum 500 copies) and permission to reprint may be purchased from Reprint Management Services at (717) 399-1900 x124 or rtry@rmsreprints.com.

USPS735-730



## BackSpin Mark Gibbs



# Let the software buyer beware

*"Let's say we buy a new room for a house. It is all complete and comes with a wooden bench. Let's call it 'Bench 3.11.' It is a basic wood bench, somewhat sturdy and fashionable for the times. It is the only bench suitable for use in this room.*

*After a while, it gets a little worn and rickety, but it is still a decent bench for sitting on. The only way you can get the bench is if you buy the room to keep it in, and you are not allowed to keep it in any other room by licensing agreement. Does this sound ridiculous yet? Wait, it gets better!"*

— The start of a fairly humorous diatribe from reader Glenn Bloom after a recent Backspin column (www.nwfusion.com, DocFinder: 8061)

Last week's column was a follow-up to a piece (www.nwfusion.com, DocFinder: 8062) that advocated dongles as a way of dealing with software piracy. In the ensuing furor many issues emerged, some of which I "had at" last week. However, there were a few issues that I didn't get to: First, morality.

A reader wrote: "Perhaps another reason why people don't feel the need for software protection is that it doesn't seem that anyone is really hurting? ... Is Microsoft financially hurting? Have they had to do massive layoffs because of the money lost to [software pirates]? No ... Microsoft is doing quite well. I

would be willing to wager that the companies that make the top 10 pirated software programs are quite successful as well. This is a matter of the rich wanting to get much richer and, past a certain point, people really don't care."

Do I really need to point out what is wrong with this thinking?

The other big issue concerned my comparing building furniture to building software. What I wrote was: "If I build a piece of software and you take a copy without paying me, there are many people who would not judge your actions as harshly as your theft of [a chair I made] ... the reality is that the theft of the software represents a real loss to me ... the work that I performed in creating the software was every bit as real as the work I put in to making the chair, and my rights to my creation and the profit therefrom should not be violated."

Reader Dan Cottler immediately riposted with: "I can go to a store and select from a wide range of chairs. ... If I buy a chair you designed and manufactured, it's MINE. I can do with it what I please, where I please. If I choose to resell it, you have NO say. If I choose to chop a leg off and stick it into my [work d'art], you have (mostly) NO say. If I choose to use it at a different table, you have NO say."

Dan is correct, to a point. That point is not only how the product (software, furniture or paintings) is licensed but also how it is copyrighted. Even though

you own a painting it isn't yours to reuse as you please. This means you can't use the painting on the cover of a magazine without infringing the rights of the artist — it is your picture but his copyright.

Going back to the chair, if you signed a license when you took delivery of the chair and it said something like, "This is a work of art and despite this product looking a lot like a chair we do not recommend you use it for any particular purpose which includes, but is not limited to, sitting on it," and you sat on it anyway and it broke, then tough: The license warned you.

Folks, it all comes down to caveat emptor — let the buyer beware. You don't have to buy the software. But if you do, if you put down your hard-earned cash, then we can assume that you're making an informed choice that includes considering the terms of the license.

Software is far more complex than how you use a chair or a painting and how you use it is far less restricted and far more unpredictable.

Licensing is required to protect those who originate and sell the software from those uncertainties because without licensing they wouldn't create software, and then you wouldn't have the opportunity to enhance your business through its use. Caveat emptor.

*Next week ... well, wait and see. Meantime, warnings to nwcolumngibbs.com.*



## 'Net Buzz News, insights, opinions and oddities

### Paul McNamara

#### Don't get your hopes up

Want to know why controlling spam seems harder than changing the weather?

Look no further than a pair of recent initiatives, one from the Direct Marketing Association (DMA), the other from a nonprofit organization called TRUSTe. These efforts purport to promise e-mail users relief from spam and its attendant scam

artists, but actually offer little more than false hope.

Let's start with the disingenuous one. Any DMA denouncement of spam is much like those antismoking public-service ads from Philip Morris: Given the messenger's real agenda, the message is not to be taken seriously.

Nevertheless, the DMA did garner headlines last week with its self-promoting pronouncement of a set of commercial e-mail "guidelines" for its members. "Based on the guidelines, solicitations sent online should disclose the marketer's identity, and the subject line should be clear, honest and not misleading," the DMA proclaims.

That's all motherhood and apple pie.

But what you really need to know about these DMA "guidelines" is that they continue to rely on that favorite fig leaf of commercial e-mailers who want to send spam but still pretend they are being responsible: opt-out. This means the onus remains on the recipient to stem the flow of unwanted junk.

Anyone who is serious about policing commercial e-mail and controlling spam long ago abandoned the pretense that providing recipients with a convenient means to avoid future spam is doing enough.

The TRUSTe initiative may look slightly more promising — emphasis on slightly — but it ought not get anyone too excited. TRUSTe is joining with a privacy consulting company, ePrivacy Group, to promote an e-mail seal-of-approval pro-

gram called Trusted Sender. The program, which will include high-profile beta testers such as Microsoft and DoubleClick, is designed to separate the trustworthy commercial e-mail from the garbage.

The problem is that the companies that would be eager to participate in a program such as Trusted Sender are not the con artists responsible for the vast majority of spam. They already practice good e-mail etiquette, more or less.

Yes, there are things to like about the principles being codified within Trusted Sender, and there may be a possibility of using a system such as this to filter spam at various levels in the food chain.

However, envisioning the day when Trusted Sender enjoys wide enough adoption for anyone to presume that nonparticipants are spammers requires more imagination than Buzz can muster.

#### How not to land a job in high-tech

Securing a high-tech job these days is tough enough without shooting yourself in the ... um, I guess "private parts" would apply here.

Did you catch this story in *The Washington Post*? In a nutshell, a job seeker in his late 30s walks into a high-tech company and makes it through a few preliminary interviews, at which point he convinces himself that he's zeroing in on the job. They have him fill out an application, which includes a blank labeled "Sex."

Our man answers "Yes."

He doesn't get the job — surprise, surprise — and, this being America, he now feels victimized. He told the newspaper he might sue the company that decided it didn't need a 12-year-old masquerading as a grown-up.

Of course the company should not have hired this knucklehead. Not because of the sophomoric humor, per se, but because no one should knowingly bring into their organization a person who so clearly has no common sense.

*Want to tell the columnist to lighten up? Try buzz@nwv.com.*





Universal Edge **IMAS**

# *Delivering Premium Quality Solutions over DSL*

With greater integration, higher densities, and optimal scalability

The UE IMAS (Intelligent Multiservice Access System) from CTDI is an industry leading carrier-class broadband access system that combines support for multiple DSL transmission types with high-capacity ATM switching.

Comprehensive Quality of Service (QoS) capabilities enable you to deliver premium-quality services over DSL with greater integration, higher densities, and better scalability.

The Universal Edge IMAS is the centerpiece of CTDI's comprehensive, industry-leading DSL portfolio. The CTDI DSL portfolio has been designed to meet increasing end-user demand for simple, high-speed, multi-service network access, while providing you with full control throughout your network.

Providing exceptional port density and gigabit ATM bandwidth, the Universal Edge IMAS portfolio sets a new standard for DSL access platforms, eliminating the limitations of DSL Access Multiplexers (DSLAMs).



The UE IMAS



The UE IMAS Remote



The UE IMAS XpressDSL

*"CTDI's UE IMAS product portfolio delivers multiple services, superior scalability and maximum network efficiency"*

Call today for more information **800.458.0398** or browse our on-line inventory @ [www.CTDI.com](http://www.CTDI.com)





**60 GIGABIT PORTS, 10-GIGABIT UPLINKS,  
WIRE-SPEED METRO ROUTER WITH MPLS.  
ALL IN 5 RACK UNITS.**



Introducing the RS 16000 from Riverstone Networks. It's the new generation of router built expressly for Gigabit and 10-Gigabit Metropolitan Area Networks. The chassis-based RS 16000 delivers up to 60 wire-speed Gigabit ports, along with 10-Gigabit Ethernet and CWDM uplinks all in 5 rack units – that's 70% more Gigabit ports per rack inch than the nearest competitor. For service providers, this means more revenue per rack and lower operating costs.

But the RS 16000 is more than the highest density router in the industry. As a full-function, Internet-caliber metro-optimized router, it also delivers rich service creation capabilities. Through hardware-based MPLS, bandwidth carving, and extensive billing and accounting, the RS 16000 converts raw bandwidth into profitable services for carriers throughout the Metropolitan Area Network.

Contact Riverstone Networks at 1-877-778-9595 or visit [riverstonenet.com/nww](http://riverstonenet.com/nww) to see how we're changing the rules in the Metro.



**Bandwidth with Brains™**